



# TTL- Penta Prism

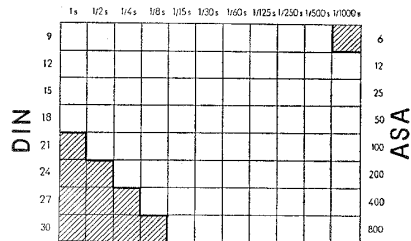
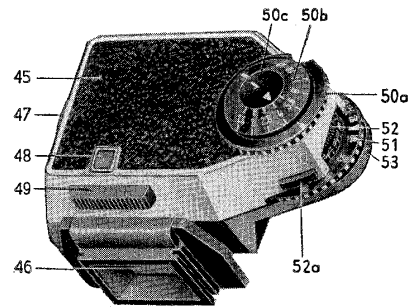
## INSTRUCTION MANUAL

automatic exposure control with  
internal measurement for the

## EXAKTA RTL 1000

### Operating controls

- 45 TTL Penta Prism
- 46 Eyepiece
- 47 Lid of the chamber for the mercury oxide element
- 48 Window with signal indicating readiness for measurement
- 49 Switch for measuring device
- 50a Lower disc of aperture-setting device with change-over switch
- 50b Central disc of aperture-setting device
- 50c Internal disc of aperture-setting device
- 51 Shutter-speed setting disc
- 52 Film-sensitivity disc
- 52a Push button for film-sensitivity setting disc
- 53 Shutter-speed setting mark



### Operating range

of TTL Penta Prism in case of aperture number 2.8 (there can be used any of the unshaded combinations)

The TTL Penta Prism (45) provides the EXAKTA RTL 1000 with an automatic exposure control on the basis of the internal measurement through the lens (Through The Lens = TTL). This automatic system, taking into account film sensitivity, exposure time, and aperture number, will always measure only the light being effective for the photograph to be taken. This method of measurement is of greatest importance above all when employing specialpurpose lenses (angle of view equal to the angle of measurement) as well as when working with extension-increasing accessories and filters (exposure factors are automatically included in the measurements).

The use as a viewfinder unit is identical to that of the Penta Prism: always upright and laterally-correct image in the viewfinder. Photographers who normally wear spectacles should use their distance glasses. For fitting and removing the TTL Penta Prism as well as for exchanging its focusing screens see the instruction manual for the camera.

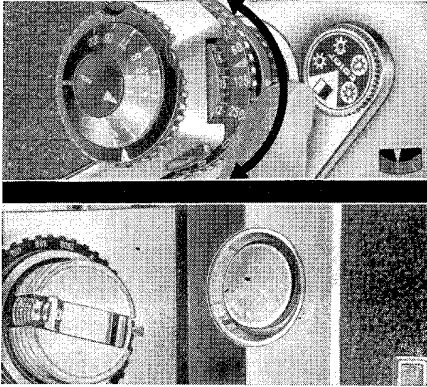
### Technical data of the TTL Penta Prism for the EXAKTA RTL 1000

The TTL Penta Prism is operating on the principle of an integrated light measurement. In that way there is ensured an evaluation of brightness which is in conformity with the subject. The TTL Penta Prism does not effect a reduced brightness of the image in the viewfinder. Its operating range comprises 13 exposure values. There can be measured luminous densities of 4 Apostilb with the aperture number 2 up to the highest values. The measurements apply to the focusing system (Fresnel screen) with microprism and annular field on the ground-glass screen. When a completely matt focusing screen is employed, the film sensitivity must be set higher by 4 DIN, with a matt focusing screen with a bright spot of 6 mm it must be set higher by 3 DIN.

If the measuring device is engaged only for the time of the measuring process, the mercury oxide element will have a service life of approximately 1 year to 1 year and a half. Owing to the use of a bridge circuit voltage fluctuations will be of no influence on the measurement results.

### Preparing the TTL Penta Prism

Employ the TTL Penta Prism (45) as far as possible only with a flexible eyepiece cup. Spectacle-wearers use a vision-correction lens (see the instruction manual for the camera).



After placing the TTL Penta Prism in the camera turn the shutter-speed setting disc (51) once from stop to stop so that the driver pin (44) will engage the grooves on the bottom side of the TTL Penta Prism (45). This has been done correctly if, when the shutter-speed setting disc (51) is turned, the shutter-speed setting knob (10) is turning, too.

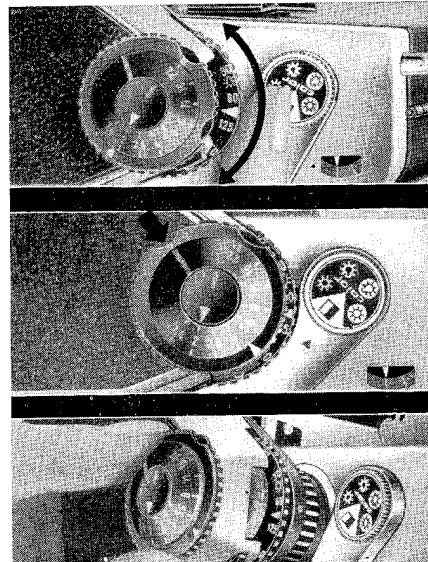
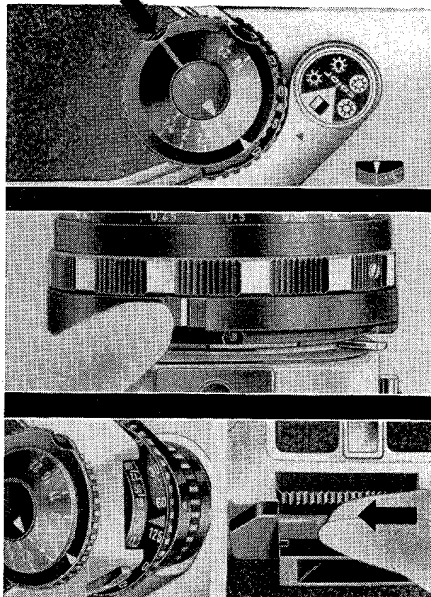
Place the mercury oxide element (Mallory PX 13) in the chamber below the lid (47): plus sign outwards.

### Setting the film sensitivity

Turn the shutter-speed setting disc (51) until the orange-coloured triangle will be visible.

Turn the lower disc (50a) of the aperture-setting device until the line will stand against the line on the central disc (50b). Push the change-over switch of the lower disc (50a) home at the two lines.

Push the push button (52a) home into the TTL Penta Prism and turn the lower disc (50a) until the white line of the desired number will be opposite the orange-coloured triangle on the shutter-speed setting disc (51). White figures: DIN, orange-coloured figures: ASA



### Measuring with the aperture chosen for the photograph

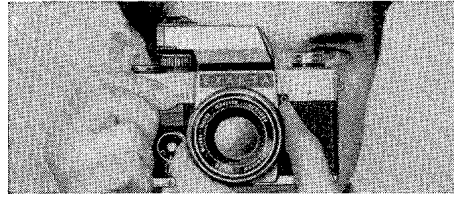
Push the change-over switch of the lower disc (50a) home at the recess with line. Set the shutter-speed setting device so that the lines on all the three discs (50a . . . c) will be exactly one above the other. For this purpose raise the lower disc (50a) and turn it until the lines on the central and internal discs (50b and c) will stand together. Let the lower disc (50a) return.

Disengage the automatic diaphragm mechanism of the lens by means of the diaphragm switch (40) (see Operating the lens in the instruction manual of the camera).

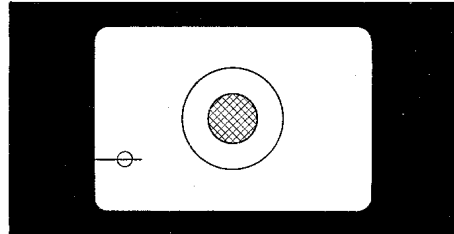
### 1. Preselection of the shutter speed

Turn the shutter-speed setting disc (51) until the shutter speed will be above the mark (53). Do not set intermediate values between the shutter speeds! — Push the switch (49) to the left (now a green signal is visible in the window (48)).

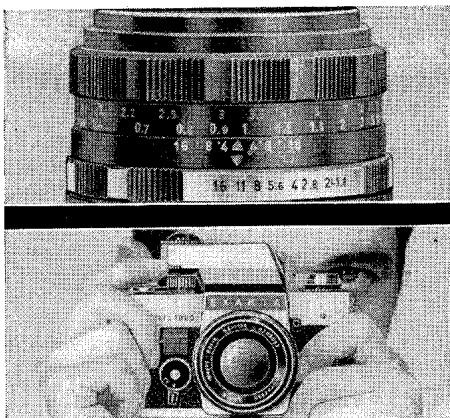
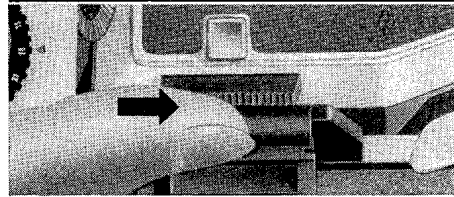
Direct the camera towards the subject to be photographed and turn the aperture-setting ring (17)



until the pointer on the left in the image in the viewfinder will be in the centre of the circular mark. (If the required position of the pointer cannot be obtained, preselect a slower shutter speed). Release.



Push the switch (49) to the right.



## 2. Preselection of the aperture number

Turn the aperture-setting ring (17) until the desired aperture number will be at the mark.

Push the switch (49) to the left. Direct the camera towards the subject to be photographed and turn the shutter-speed setting disc (51) until the pointer on the left in the image in the viewfinder will be in the centre of the circular mark. (Do not set intermediate values between the shutter speeds. In case of need effect fine correction by means of the aperture-setting ring (17). If the required position of the pointer cannot be obtained, preselect a smaller aperture number = greater lens aperture.

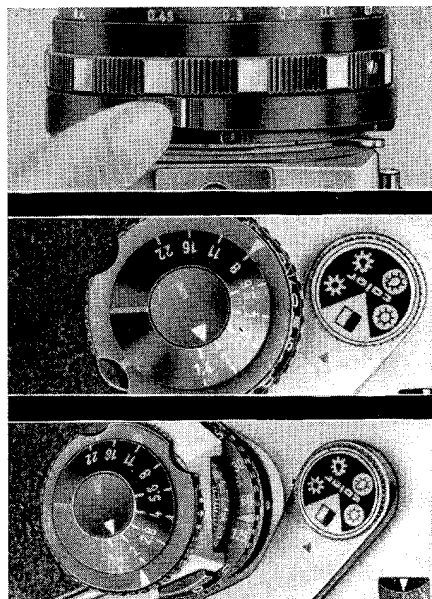
## Measuring with open diaphragm

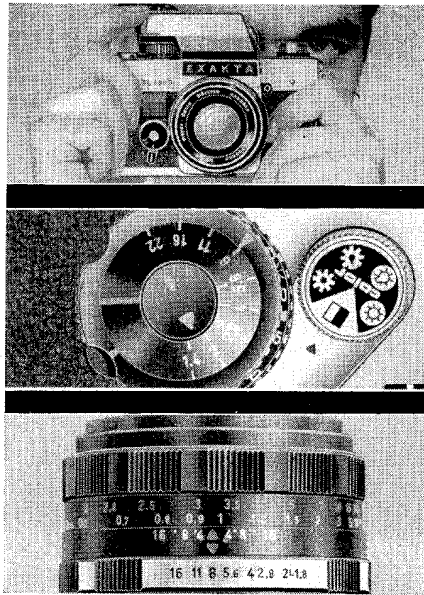
Engage the automatic diaphragm mechanism of the lens by means of the diaphragm switch (40) (see Operating the lens in the instruction manual of the camera).

Push the change-over switch of the lower disc (50a) home at the recess without line. Raise the lower disc (50a) of the aperture-setting device and turn it until the smallest aperture number of the lens employed will stand at the triangular mark on the internal disc (50c). There can be set the aperture numbers from 1.4 to 5.6 as well as intermediate values. Let the lower disc (50a) return. It is not permissible to effect the measurement with an aperture differing from the open diaphragm of the lens employed.

## 1. Preselection of the shutter speed

Turn the shutter-speed setting disc (51) until the desired shutter speed will stand above the mark (53). Do not set intermediate values between the shutter speeds!





Push the switch (49) to the left. Direct the camera towards the subject to be photographed, and turn the lower disc (50a) of the aperture-setting device until the pointer on the left in the image in the viewfinder will stand in the centre of the circular mark. If the required position of the pointer cannot be obtained, preselect a slower shutter speed.

On the aperture setting device read the aperture number at which the triangular mark on the lower disc (50a) is standing.

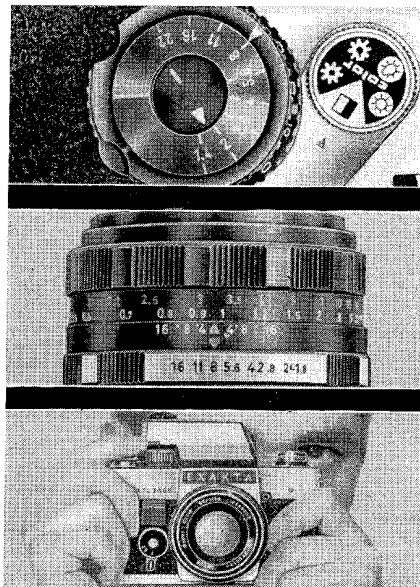
Set the aperture-setting ring (17) of the lens to this aperture number. Release. Push the switch (49) to the right.

## 2. Preselection of aperture number

Turn the aperture-setting ring (17) until the desired aperture number will stand at the mark.

Push the switch (49) to the left, direct the camera towards the subject to be photographed and turn the lower disc (50a) of the aperture-setting device until the pointer will stand on the left in the image in the viewfinder in the centre of the circular mark. Turn the shutter-speed setting disk (51) until the selected aperture number on the central disc (50b) of the aperture-setting device will stand opposite the triangular mark on the lower disc (50a) of the aperture-setting device.

If this opposition is not possible to a full aperture number, readjust the aperture number on the lens in accordance with the value indicated on the central disc (50b) of the aperture-setting device by turning the aperture-setting ring (17). Do not set intermediate shutter-speed values. If the required position of the pointer cannot be obtained, preselect a smaller or greater aperture number. Release. Push the switch (49) to the right.



Please pay attention to all directions in this instruction. Incorrect handling of the camera can result in damages whose elimination is not performed within the frames of our guarantee.

Technical improvements of the TTL Penta Prism for the EXAKTA RTL 1000 can lead to insignificant deviations from this publication.

Original  
**EXAKTA**  
 Dresden

German Democratic Republic