



# TTL-Prism

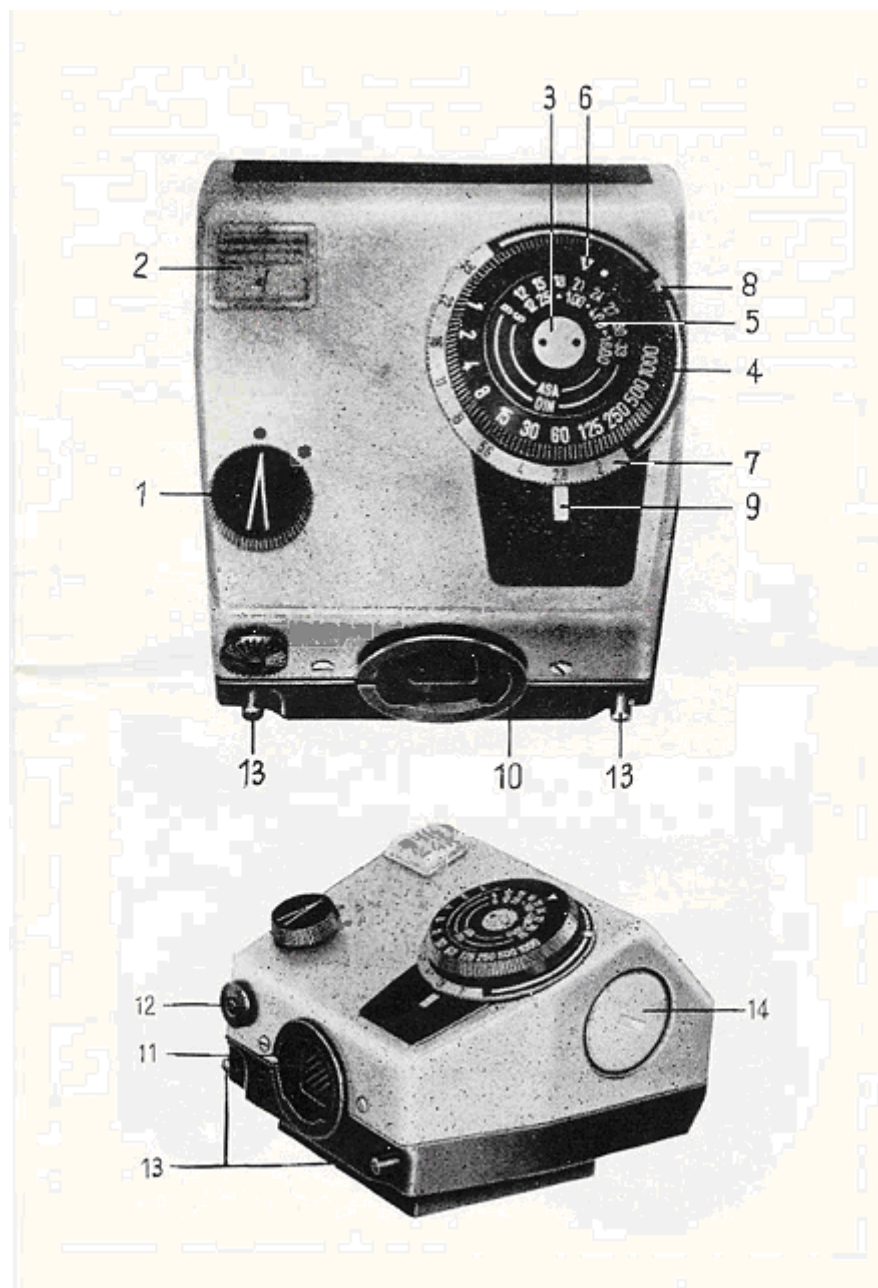
for PENTACONsix and PRAKTISIX

## INSTRUCTIONS FOR USE



## CONTROLS

<ol style="list-style-type: none"> <li>1. Switch knob for measuring circuit</li> <li>2. Window showing meter needle and central mark</li> <li>3. Control knob, consisting of inner section with film speed scales (5) and shutter speed ring (4)</li> <li>4. Shutter speed ring</li> <li>5. Film speed scales</li> <li>6. Index mark for setting film speeds</li> <li>7. Aperture value ring</li> <li>8. Index mark for measuring with time value priority (shutter speed priority)</li> <li>9. Index mark for aperture values, shutter speed values, or mark (8)</li> </ol>	<ol style="list-style-type: none"> <li>10. Eyepiece mount</li> <li>11.</li> <li>12. Control knob for viewfinder mask</li> <li>13. Locking knobs</li> <li>14. Battery chamber with lid</li> <li>15. Vertical scale showing meter needle and central mark</li> <li>16. Boundary lines of measured area in viewfinder</li> <li>17. Manual stop-down lever on the lens</li> </ol>
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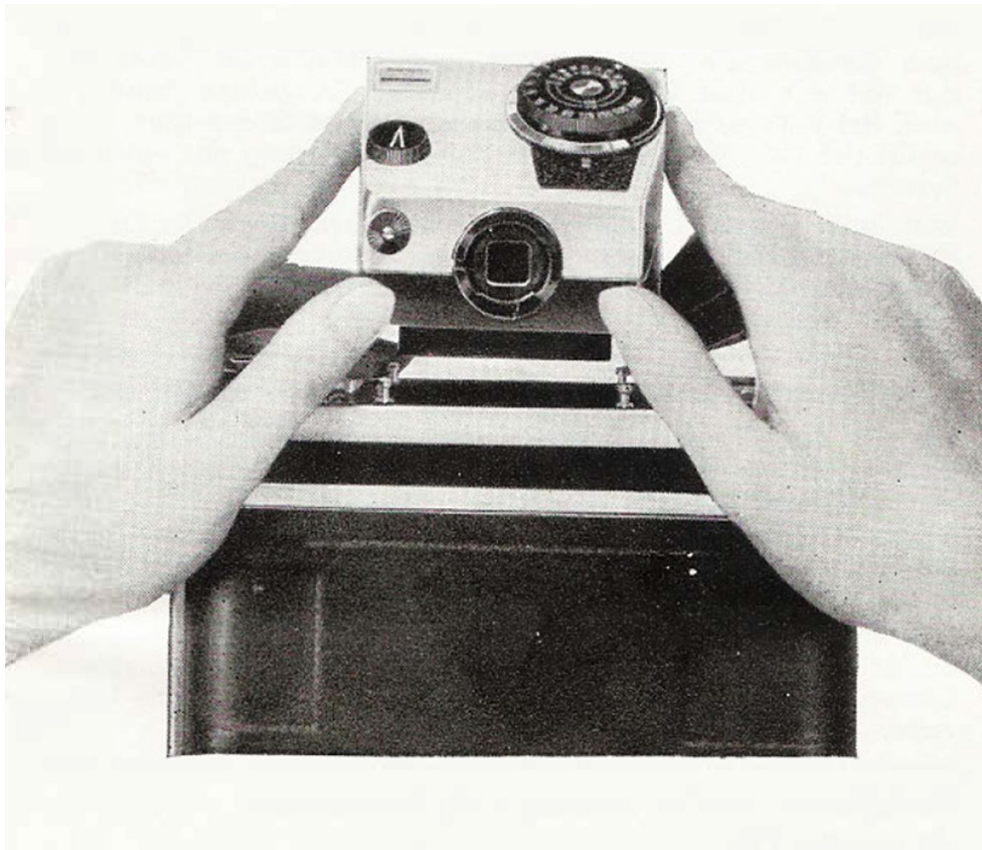


The TTL-Prism Attachment can be used instead of a waist-level finder, a magnifier head or a usual pentaprism on PENTACONsix or PRAKTISIX cameras. It enables partially integral light metering to be performed, based on the modern, technically accurate internal measuring system. All factors making any difference with regard to the exposure are automatically taken into account. Correction of exposure values is no longer necessary, for instance with close-up bellows or filters.

We insist you study these instructions with utmost care since we can accept no liability whatsoever for any damage caused by improper handling of the equipment.

### **FIXING THE TTL-PRISM TO THE CAMERA**

To fix the attachment to the camera, depress two locking knobs (13) simultaneously. Now place the attachment from above on the four connecting bolts of the camera. Release the knobs, and the attachment is fixed tightly to the camera. If the Everready Case for a PENTACONsix or PRAKTISIX with a pentaprism is being used, the TTL-Prism Attachment can remain on the camera.



### **FUNCTIONING AND DESIGN OF THE TTL-PRISM ATTACHMENT**

The roof-shaped pentaprism incorporated in the TTL-Prism Attachment reveals to the camera user a correct-sided, upright finder image viewed through the viewfinder lens which gives an approximately 2.5-fold magnification. With the standard 80 mm lens on the camera, this means a total magnification of the optical system of about 0.8 times.

Like on a pentaprism without an exposure meter, the mount of the eyepiece is designed to accept extra accessories such as the Accessory Shoe, Eyecup, Mount for a Correcting Lens, Angle Finder, or Focusing Telescope.

## THE EXPOSURE METER SYSTEM

### The Measuring Principle

The photoelectric exposure meter in the TTL-Prism Attachment works according to the principle of partially integral measuring, i.e. measuring takes place integrally within the area 25 mm in diameter (16), as marked in the viewfinder. This arrangement has an advantage that special allowance is made for important sections of the image.

The exposure meter system is constructed in such a manner that the light required for measuring is taken from the image erecting surface of the pentaprism and conducted to the CdS photo resistor. Power source is a mercury-oxide battery Mallory PX 13. The metering process is quick and simple. The meter needle has only to be moved to coincide with a fixed mark by rotation of control knob (3).

Movement of the meter needle can be watched either on vertical scale (15) to the left of the image area in the viewfinder or in window (2) on the top of the TTL-Prism Attachment.

There are three methods of measuring with the TTL-Prism Attachment:

- measuring with lens at full aperture
- measuring with aperture value priority (at taking aperture)
- measuring with time value priority (shutter speed priority)

### Scales for Film Speed, Aperture Values, and Shutter Speed

On knob (3), there are two scales indicating film speeds. Ring (4) bears shutter speed values and index mark (6) for setting the film speeds. Separate ring (7) below knob (3) shows the aperture values and index mark (8).

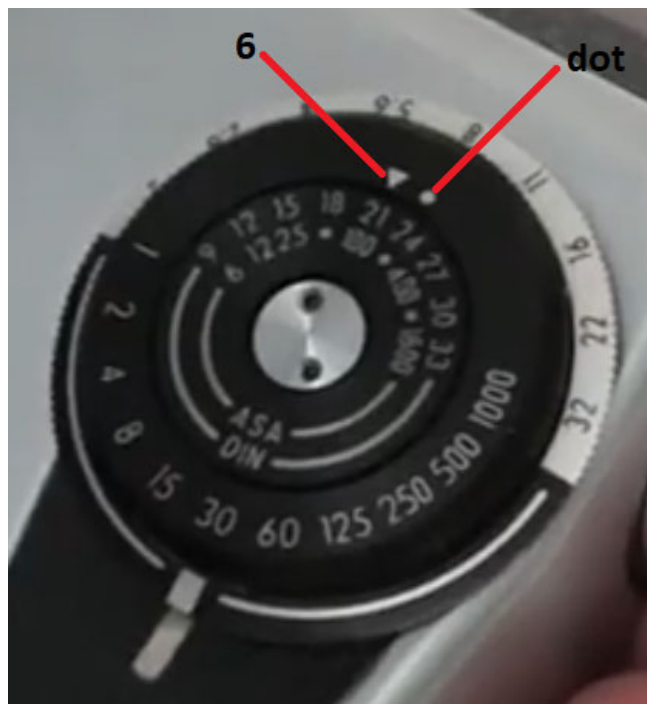
### Film Speed Scales

Control knob (3) is provided with two scales for setting film speeds in DIN and ASA standards. Lift shutter speed ring (4) up and rotate it to set the speed of the film in the camera. Ring (4) clicks in every particular value, also at the intermediate stops between the values on the scales.

All the values listed in the table below are adjustable on the TTL-Prism Attachment. The film speed values printed in bold type indicate the numbers marked on the scales.

DIN	ASA	DIN	ASA
<b>9</b>	<b>6</b>	<b>21</b>	<b>100</b>
10	8	22	125
11	10	23	160
<b>12</b>	<b>12</b>	<b>24</b>	<b>200</b>
13	16	25	250
14	20	26	320
<b>15</b>	<b>25</b>	<b>27</b>	<b>400</b>
16	32	28	500
17	40	29	650
<b>18</b>	<b>50</b>	<b>30</b>	<b>800</b>
19	64	31	1000
20	80	32	1250
		<b>33</b>	<b>1600</b>

Shutter speed ring (4) has two index marks: triangle (6) and a white dot. When the camera features an ordinary unmodified ground glass focusing screen, use the triangle (6). If the camera has a brighter Fresnel screen installed, use the white dot. Non-ground glass screens are not suitable for exposure metering.



### **Power Source**

The power source for the photoelectric metering system is a Mallory battery of PX 13 type. The lid of the battery compartment (14) on a side of the TTL-Prism Attachment is unscrewed with a round piece of plastic, a suction cap, or a surgical glove which provides better friction than bare fingers. Then a battery is inserted. The side of the battery bearing the plus sign (+) must face the lid which bears the same sign on the inside.

The exposure meter circuit is switched on and off with knob (1). Turn the knob to the right as far as it will go so that its arrow points at the green dot, and the exposure meter is switched on.

Turn the knob to the left as far as it will go so that its arrow points at the red dot, and the exposure meter is switched off. Make sure not to keep it on for a long time thus exhausting the battery.

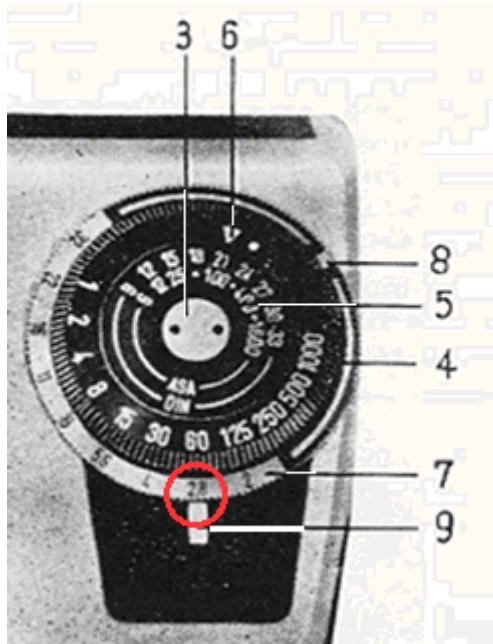
A bridge circuit is employed in the metering system, thus eliminating the necessity of checking the working voltage of the battery. Nevertheless, it is advisable to insert a new PX 13 battery after 1 or 2 years. Owing to danger of explosion, a discharged mercury-oxide battery must not be disposed of in fire.

## **EXPOSURE MEASURING METHODS**

### **Measuring at Full Lens Aperture**

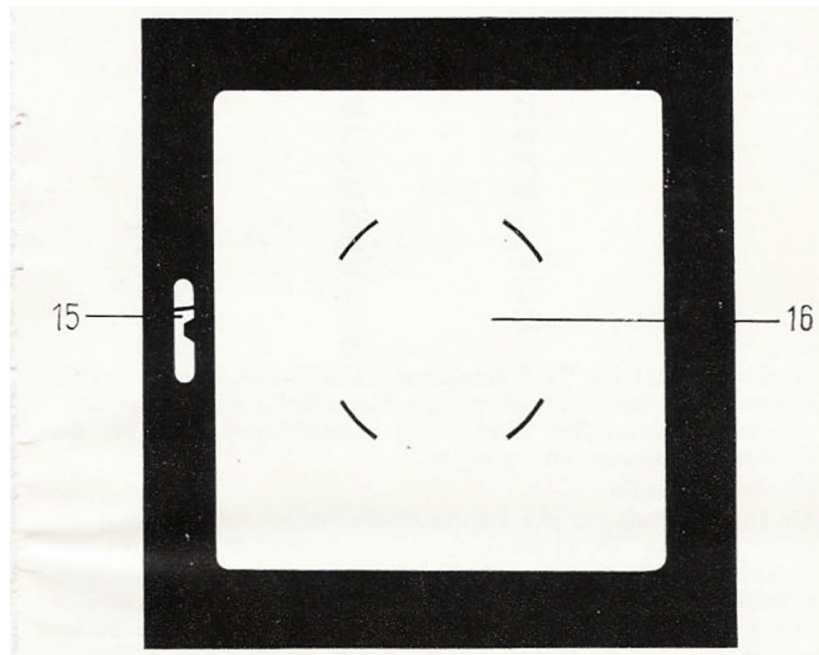
1. Set the film speed. Lift up shutter speed ring (4) of knob (3) as far as it will go, at the same time turn it until white triangle (6) points at the desired film speed value. The ring will click when it is dropped back. Intermediate values between the numerals can also be selected (see Table on page 4).

2. Set the widest aperture available on the lens (the smallest aperture value, e.g. 2.8). Rotate aperture value ring (7) until the desired aperture value coincides with index mark (9). Intermediate values can also be selected.



3. Cock the camera shutter.
4. Switch on the TTL-Prism Attachment. Rotate knob (1) so its arrow points at the green dot.
5. Direct the camera towards the object to be photographed. Important sections of the image must appear within the boundary lines of the viewfinder (16). Move the meter needle to the central mark. Rotate control knob (3) until the meter needle coincides with the central mark either on vertical scale (15) to the left of the image area in the viewfinder or in window (2) on the top of the TTL-Prism Attachment. In the latter case it is advisable to close the viewfinder with the mask by rotation of knob (12) so that outside light cannot get through the eyepiece and falsify the reading, especially if the camera is on a tripod. When watching the meter needle through the eyepiece, it is advisable to insert the Eyecup supplied as an accessory, into eyepiece mount (10) so that outside light cannot get through the eyepiece and falsify the reading.
6. The measuring procedure will yield a range of aperture value/shutter speed combinations each of which ensures the correct exposure of the film. These can be read on both aperture value ring (7) and shutter speed ring (4).
7. Switch off the TTL-Prism Attachment. Rotate knob (1) so its arrow points at the red dot.
8. Choose the desired aperture/shutter speed values and set them on the camera and the lens.
9. Fire the camera shutter.

Obviously this method is essentially the same as of a standalone light meter commonly used in film photography.



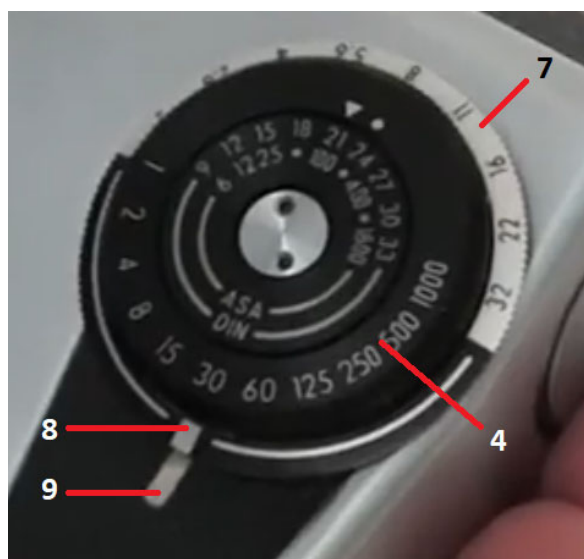
### **Measuring with Aperture Value Priority (at Taking Aperture)**

1. Set the film speed. Lift up shutter speed ring (4) of knob (3) as far as it will go, at the same time turn it until white triangle (6) points at the desired film speed value. The ring will click when it is dropped back. Intermediate values between the numerals can also be selected (see Table on page 4).
2. Set the desired aperture value on the TTL-Prism Attachment. Rotate aperture value ring (7) until the desired aperture value coincides with index mark (9). Intermediate values are also adjustable.
3. Set the desired aperture value on the camera lens.
4. Cock the camera shutter.
5. Switch on the TTL-Prism Attachment. Rotate knob (1) so its arrow points at the green dot.
6. Direct the camera towards the object to be photographed. Important sections of the image must appear within the boundary lines of the viewfinder (16).  
Move the meter needle to the central mark. With your left hand supporting the lens from beneath, push manual stop-down lever (17) on the lens with your left forefinger (see the picture below). Rotate control knob (3) until the meter needle coincides with the central mark either on vertical scale (15) to the left of the image area in the viewfinder or in window (2) on the top of the TTL-Prism Attachment.  
In the latter case it is advisable to close the viewfinder with the mask by rotation of knob (12) so that outside light cannot get through the eyepiece and falsify the reading, especially if the camera is on a tripod.  
When watching the meter needle through the eyepiece, it is advisable to insert the Eyecup supplied as an accessory, into eyepiece mount (10) so that outside light cannot get through the eyepiece and falsify the reading.
7. Read the desired shutter speed value on control knob (3) and set the nearest to it on the camera (intermediate shutter speeds are not available). Fine adjustment is made by adjusting the diaphragm setting ring on the lens.
8. Fire the camera shutter.
9. Switch off the TTL-Prism Attachment. Rotate knob (1) so its arrow points at the red dot.



### Measuring with Time Value Priority (Shutter Speed Priority)

1. Set the film speed. Lift up shutter speed ring (4) of knob (3) as far as it will go, at the same time turn it until white triangle (6) points at the desired film speed value. The ring will click when it is dropped back. Intermediate values between the numerals can also be selected (see Table on page 4).
2. Align index marks (8) and (9). Rotate aperture value ring (7) until they coincide.



3. Set the desired shutter speed value on the TTL-Prism Attachment (30 in the example above). Rotate shutter speed value ring (4) until both index marks (8) and (9) point at the desired shutter speed value. Set the desired shutter speed value on the camera.

4. Cock the camera shutter.

5. Switch on the TTL-Prism Attachment. Rotate knob (1) so its arrow points at the green dot.

6. Direct the camera towards the object to be photographed. Important sections of the image must appear within the boundary lines of the viewfinder (16).

Move the meter needle to the central mark. With your left hand supporting the lens from beneath, push manual stop-down lever (17) on the lens with your left forefinger (see the picture above). Rotate the diaphragm setting ring on the lens with your left thumb until the meter needle coincides with the central mark either on vertical scale (15) to the left of the image area in the viewfinder or in window (2) on the top of the TTL-Prism Attachment.

In the latter case it is advisable to close the viewfinder with the mask by rotation of knob (12) so that outside light cannot get through the eyepiece and falsify the reading, especially if the camera is on a tripod.

When watching the meter needle through the eyepiece, it is advisable to insert the Eyecup supplied as an accessory, into eyepiece mount (10) so that outside light cannot get through the eyepiece and falsify the reading.

7. Fire the camera shutter.

8. Switch off the TTL-Prism Attachment. Rotate knob (1) so its arrow points at the red dot.

Slight alterations of the details given above may result from further development of the TTL-Prism Attachment.



# TTL-Prisma

zur PENTACONsix und PRAKTISIX

**VEB PENTACON DRESDEN**

Deutsche Demokratische Republik

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