

Zenit-19



This text is identical to the one in the User manual, English version, edition 1980.

1. Uses and Advantages

ZENIT-19 camera is intended for taking amateur pictures on black-and-white or color films; it can be used as well for special kinds of photography, for macro- and microphotography, for reproduction works, etc. It accepts interchangeable lenses having mounting thread of M42×1 and flange/film distance of 45.5 mm. The following features are remarkable with the ZENIT-19 camera:

- semi-automatic exposure meter which measures light through the lens (TTL system) provides for correct exposure setting when taking pictures with the standard lens as well as with interchangeable lenses, light filters, supplementary lenses, extension tubes;
- needle indicator in the viewfinder field of view enables to find the best possible combination of aperture and shutter speed without interrupting the subject viewing; it indicates insufficient or excessive illumination as well;
- electromechanical shutter of the camera gives a wide range of shutter speeds and ensures uniform exposure over the whole-frame;
- special light indicator provides for quick checking of the batteries;
- self-rezeroing frame counter automatically resets at "0" upon opening the camera back door;
- instant return mirror ensures continuous viewing of a subject before and after exposure;
- high speed lens is fitted with a pre-set diaphragm mechanism which automatically stops down the lens at the moment of the shutter firing or on pressing the depth-of-field pre-view button;
- focusing can be done both by a microraster or a ground glass circle in the centre of the finder field of view;
- shutter cocking and film advance by one frame are easy and quick to perform by turning the shutter cocking lever through a small angle;
- built-in self-timer enables you to take a picture of yourself among your friends or to make a separate self-portrait.

2. Specifications

Picture size — 24×36 mm

Film used — 35 mm, perforated

Length of film in cassette — 1,85 m

Number of frames — 36

Shutter speeds — from 1 to 1/1000 s, "B" (by hand) and long exposure

Exposure meter supply — from two PX-13 batteries

Film speed range — from 16 to 500 ASA

Lens mounting thread — M42×1

Viewfinder linear field of view — 22,8×34,2 mm

Tripod socket thread — 1/4"

Standard lens	ZENITAR-M	or	HELIOS-44M
Focal length	50 mm		58 mm
Maximum relative aperture	f/1.7		f/2
Aperture scale	from 1,7 to 16		from 2 to 16
Distance scale	from 0,45 m to ∞		from 0,55 m to ∞
Light filter mounting thread	M52×0,75		M52×0,75
Overall dimensions of camera without its case	138×96×103 mm		138×96×103 mm
Mass	0,95 kg		0,95 kg

Certificates of Authorship:

No. 366447 of June 14, 1972; No. 527683 of April 23, 1975, No. 720403 of November 14, 1979.

3. Please note!

The present Description contains the basic characteristics and essential operating principles of the ZENIT-19 camera and should not be regarded as a hand-book on photography in general.

Before using this camera make thorough study of the operating procedures given in the present Description.

Due to ever-advancing development in camera construction minor differences may occur between the text and your camera. It is advisable to load and unload the camera indoors or in shadows trying to avoid direct sun rays. Always wind the shutter by turning the lever as far as it will go. Try not to keep the camera with the shutter cocked for a long period of time.

The camera construction provides for locking the shutter cocking and film advance while operating the release button and vice versa, the release button gets locked when the shutter is being cocked and film advanced to prevent any risk of damage and wrong exposure.

Should you fail to press the release button or to turn the shutter cocking lever, do not apply an excessive force to the control levers, but check your actions according to the Technical Description.

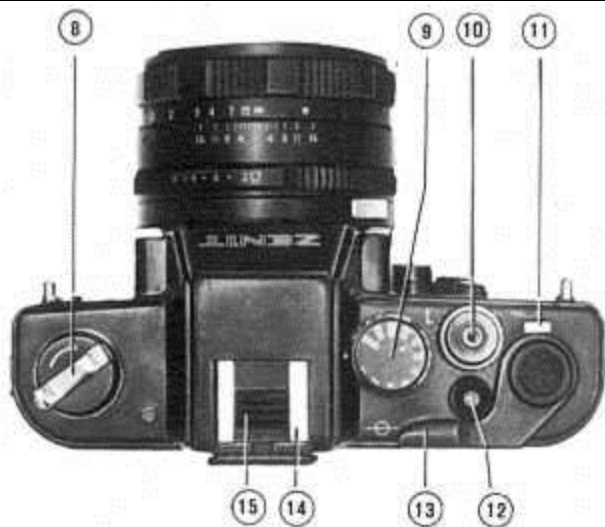
When changing PX-13 batteries keep strictly to the polarity signs indicated on the compartments into which the batteries are fitted.

During intervals in picture taking try and avoid such a position in which the depth-of-field pre-view button might happen to be pressed for a long time, since in such a case the electric circuit will be switched on and the batteries will be discharged before their time.

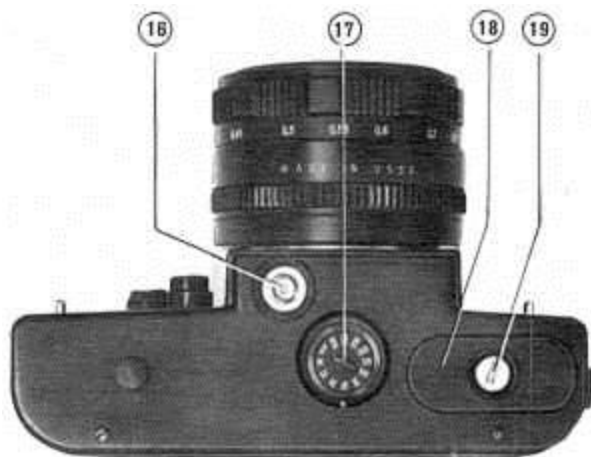
When taking pictures in frosty weather (below -15°C) keep the camera under your street-clothes but not in the open air and take it out only for the moment of picture taking.



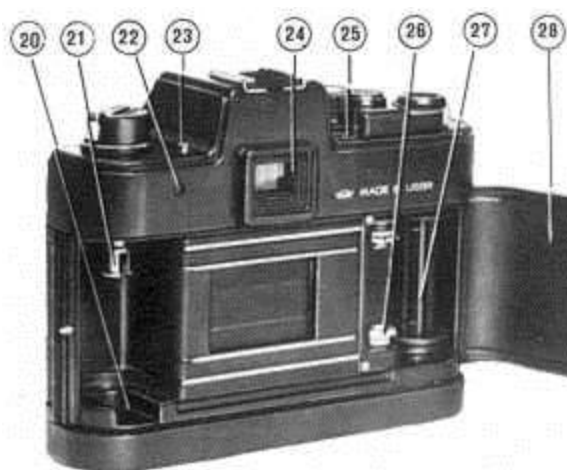
- 1 — self-timer lever
- 2 — self-timer release button
- 3 — release button locking bush
- 4 — depth-of-field preview button
- 5 — film rewind knob
- 6 — flash unit connector socket
- 7 — neckstrap eyelet



- 8 — film rewind crank
- 9 — shutter speed dial
- 10 — release button internally threaded for cable release
- 11 — frame counter window
- 12 — shutter disengaging button
- 13 — shutter cocking and film advance lever
- 14 — hot shoe
- 15 — protective strip



- 16 — tripod socket
- 17 — film speed dial
- 18 — battery compartment cover
- 19 — battery compartment cover screw



- 20 — cassette chamber
- 21 — cassette spool guide
- 22 — battery check window
- 23 — battery check button
- 24 — viewfinder eyepiece with mount for attaching photoaccessories
- 25 — film plane index
- 26 — sprocket
- 27 — take-up spool
- 28 — camera back door
- 29 — back door lock



- 30 — aperture scale
- 31 — lens mounting ring
- 32 — focusing ring
- 33 — distance scale
- 34 — depth-of-field scale
- 35 — diaphragm setting ring
- 36 — diaphragm mode selector switch
- 37 — diaphragm control pin

4. Loading the Camera

Put two batteries of PX-13 type into the compartments in the way indicated in Section “Changing the Batteries”.

Load the camera in the following way:

- pull up the latch of lock 29 and open back door 28;
- pull up film rewind knob 5;
- place a cassette with film in chamber 20;
- press film rewind knob 5 completely home;
- draw out from the cassette enough film to insert the leader into the slot of take-up spool 27.

Turn shutter cocking lever 13 as far as it will go to make sure that sprocket 26 teeth have properly engaged sprocket holes in film;

- close back door 28;
- fire the shutter by pressing release button 10;

The shutter being cocked, the film is advanced by one frame. To transport a nonexposed portion of film to the film gate, cock the shutter two times pressing the release button after each cocking; in so doing figure “0” should appear in the centre of frame counter window 11.

Should the film be wound tightly in the cassette, the film rewind knob will rotate when the shutter is being cocked. If the film is slack in the cassette, the rewind knob will fail to rotate with the first few frames;

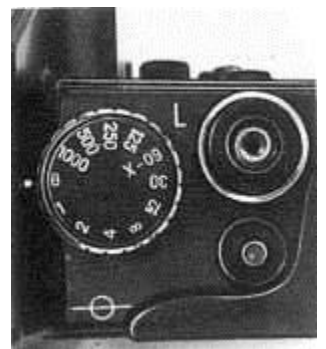
— set the film speed value by turning dial 17 on the camera bottom till it aligns with the index mark and locks in a click-stop position. It should be kept in mind that wrong setting of the film speed with dial 17 will result in a wrong exposure.



5. Shutting Speed Setting

Shutter speeds are set by turning shutter speed dial 9 in either direction till a selected shutter speed is brought opposite to the index mark and the dial is locked in a click-stop position. “B” denotes hand-controlled exposures. When taking pictures at “B” the shutter remains open for as long as release button 10 is kept depressed. Long exposures are obtained by locking release button 10 in the depressed position by turning bush 3 counter-clockwise as far as it will go (“L” position). The exposure over, return the bush to its initial position by turning it clockwise as far as it will go.

For long exposures it is recommended to use a cable release of a locking type which can be screwed into the release button thread. To take pictures with long exposures as well as at shutter speeds of 1/15, 1/8, 1/4, 1/2, and 1 s the camera should be better mounted on a tripod.



6. Aperture Setting

Set a selected aperture value against the index mark by turning diaphragm setting ring 35.

The diaphragm is capable of operating in two modes:

— in automatic one (selector switch 36 in “A” position). In this mode turning of diaphragm setting ring 35 does not result in lens diaphragming but sets preliminarily the aperture value to which the diaphragm will stop down upon pressing release button 10 and before the shutter firing or upon pressing depth-of-field preview button 4. The diaphragm remains open in the “A” mode until the release button or the pre-view button are pressed;

— in manual one (selector switch 36 in “M” position). In this mode the lens diaphragm is set manually by turning diaphragm ring 35. As a rule the “M” mode is used to take pictures with extension tubes that are not fitted with a control pin operating the pre-set diaphragm mechanism.

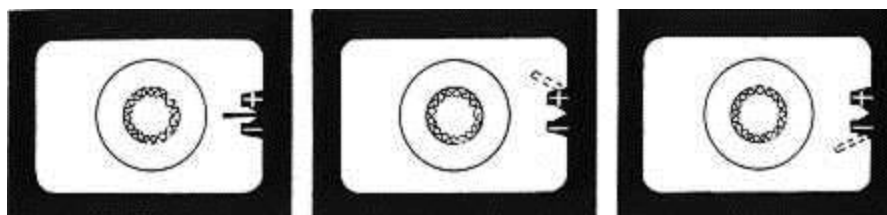
7. Exposure Setting

Correct exposure setting depends on a proper combination of aperture, shutter speed and film speed. The exposure is often set either with the shutter priority (the rate of the subject movement is taken into account) or with the aperture priority (depth of field is taken into account).

In those cases either a shutter speed is set first (as indicated in section “Shutter Speed Setting”) and then an aperture value is selected depending on it, or an aperture value is set first (as indicated in Section “Aperture Setting”) and then a shutter speed is selected.

To obtain a combination of aperture and shutter speed which would ensure a correct exposure do the following:

- aim the lens at a subject to be taken;
- while looking through the viewfinder eyepiece press pre-view button 4;
- turn diaphragm setting ring 35 or shutter speed dial 9 to match the needle in the viewfinder field of view with the cut of the black mask on the right-hand side of the viewfinder.



The exposure is excessive if the needle deflects to sign “+” and insufficient if it deflects to sign “-”.

Should the needle keep on deflecting to sign “+” with all possible combinations of aperture and shutter speed values, either the subject illumination should be decreased, or a filter of a corresponding filter factor used, or the camera should be loaded with film of a lower speed.

If the needle keeps on deflecting to sign “-” with all possible combinations of aperture and shutter speed values, either the subject illumination should be increased or film of a higher speed be used.

8. Focusing

In the camera viewfinder there is Fresnel lens 38 with microraster centre spot 39 surrounded with ground glass circle 40. While watching the subject being photographed turn focusing ring 32 to obtain the sharpest image on the microraster or the ground glass circle. For this purpose perform focusing with the diaphragm fully open.

The best sharpness can be obtained when the image appears sharp and without ripples on the microraster. The ground glass circle is mainly used for micro- and macrophotography, or for taking pictures with small apertures (when microraster loses its sensitivity), as well as for estimating the depth of field with the set aperture.

Focusing can be done as well without looking in the viewfinder. For this purpose turn focusing ring 32 and making use of distance scale 33 set the value, corresponding to the distance from the subject being taken to film plane index $\Theta-25$, against the large index mark of scale 34 (the small red index mark on scale 34 is used to take pictures on some infra-red photographic material).

9. Depth-of-field Determing

With the lens focused, you can determine the distance from the film to the near and far depth-of-field limits by making use of scales 33 and 34.

For example, the lens is focused for 3 m and the aperture value, which is to be used, is that of "8". In such a case you can read on scale 33 against two figures "8" of scale 34 that the image will be sharp within the distance limits from 2.3 to 5.2 m. With the lens focused and aperture value set you can visually determine approximate depth-of-field limits in the following way:

— with the diaphragm operated in automatic mode, press the pre-view button, i.e. stop down the lens to a selected aperture.

Within the ground glass circle of viewfinder 40 you can see what subjects will be sharp with the given focusing;

— in manual mode you can estimate the image sharpness within the ground glass circle without pressing the pre-view button.

10. Picture taking

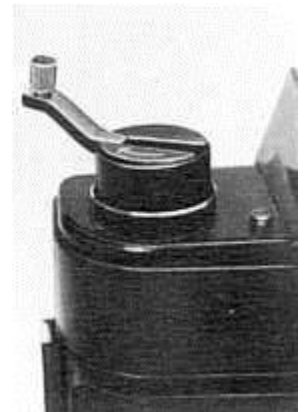
Having prepared the camera for picture taking, cock the shutter, make sure of correct focusing and exposure setting as well as of proper framing and smoothly press release button 10. Should you change your mind to take a picture but have already cocked the shutter, lock the release button by turning bush 3 counter-clockwise as far as it will go to prevent any risk of accidental pressing.

To unlock the release button return the bush to the initial position. Remember that sharp pressing of the release button results in the camera shaking at the moment of exposure and thus in blurring of the picture, especially at a shutter speed of 1/30 s (which is still used without mounting the camera on a tripod).

11. Unload the camera

When the frame counter shows 36 shots, rewind the exposed film into the cassette. To do this:

- a) disengage the shutter mechanism by pressing button 12;
- b) lift crank 8 and rotate film rewind knob 5 in the arrow direction till the film leaves the take-up spool;
- c) pull the film rewind knob upwards as far as it will go, open the back door and take the cassette out of the camera.



12. Using the self-timer

To use the self-timer mount the camera on a tripod. Then do the following:

- a) focus the lens;
- b) set the exposure;
- c) cock the shutter;
- d) wind the self-timer mechanism by moving lever 1 counter-clockwise until no further movement is possible;
- e) press self-timer release button 2 completely home and take your place in front of the lens. The shutter will operate in no less than 7 seconds after pressing the button.

Note! When the shutter has been fired by the self-timer, press the release button of the camera before cocking the shutter for the next time.

To use the self-timer mount the camera on a tripod. Then do the following:

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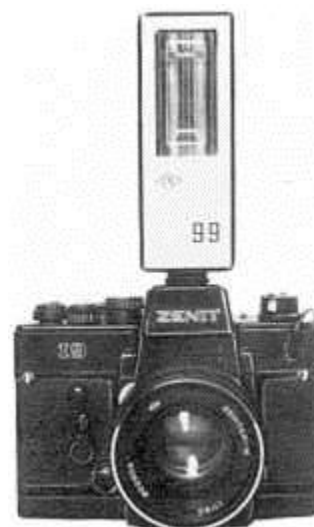
13. Taking Flash Pictures

The camera shutter is synchronized for use with different types of flash units (X-synchronization). To connect a flash unit with the camera, the latter is fitted with two special devices:

- a) hot shoe 14;
- b) flash unit connector socket 6 located on the front wall of the camera.

Flash pictures can be taken at shutter speeds of 1/60 s and longer.

To secure a flash unit in shoe 14 first remove protective strip 15 out of the shoe. When a flash unit is not used, shield the contact with the protective strip.



14. Using interchangeable lenses and taking close-up pictures

The ZENIT-19 camera permits use of interchangeable lenses provided with M42×1 mounting thread and flange/film distance of 45.5 mm.

With the help of a special stand the ZENIT-19 camera can be used for making copies of drawings, manuscripts, photographs.

To do reproduction works use should be made of extension tubes that go between the camera body and the lens.

To achieve the magnification that you want either, one tube or a combination of tubes can be used.

To make use of extension tubes having no control pins the diaphragm mode selector switch should be set to "M" mode and the lens diaphragm should be operated manually.

15. Changing the batteries

The electric circuit of the exposure meter is supplied from two PX-13 batteries. The batteries should be checked in the following cases: every time after loading the camera with film; when the camera was out of use for a long period of time; when changing exhausted batteries.

To check the batteries for serviceability press battery check button 23.

Should the batteries be serviceable, a red light signal will appear in window 22.

To change the PX-13 batteries do the following:

- using a coin turn screw 19 of cover 18 counterclockwise and remove the cover;
- take out the exhausted batteries;
- into the compartment marked " + " put a battery with its sign " + " downwards and into the compartment marked " + " put the second battery with its sign " + " facing you;
- put the cover on the compartment and tighten the screw;
- press battery check button 23.

16. Handling and Care of the Camera

The ZENIT-19 camera is a precise optical mechanical instrument. Handle the camera carefully; keep it clean and protected from bumps and jolts, dust, and sharp changes of temperature.

Do not touch the optical details since this is likely to damage their coating. Clean the coated optical surfaces only from outside with a clean soft piece of fabric or cotton wool slightly dampened with rectified alcohol or ether. The mirror and Fresnel lens may be cleaned only if absolutely necessary with a very soft dry brush but in no case with humid cleaning agents.

Keep the camera within its carrying case. In so doing the lens should be capped and the shutter fired.

Do not remove the lens from the camera unless absolutely necessary, since it could allow dust and dirt to get into the camera and onto the surfaces of the lens optical details.

Since the camera is a complex instrument, any repair and corresponding adjustment should be performed by highly-skilled specialists in repair shops only.