

CAMERA

Kyiv-10

Brief Description



НИИВ

В/О МАШПРИБОРИНТОРГ СССР·МОСКВА

This is a translation from Russian to English via OCR and Google translate.

BRIEF DESCRIPTION: Before you begin taking photographs, carefully study the operating procedures for the camera as outlined in this description.

Please note that this description contains only brief information regarding the camera's construction and operating instructions; it is not intended to serve as a general guide to photography.

PURPOSE

The "Kyiv-10" is a high-class small-format single-lens reflex camera featuring automatic exposure setting.

The camera is designed for various amateur and professional photographic applications, and may also be utilized in scientific and technical photography.

KEY SPECIFICATIONS

Automatic exposure setting is achieved through diaphragm control, regulated by a built-in exposure metering system (shutter speed and film sensitivity are set manually in advance).

The exposure metering system operates within a brightness range of 16–16,000 nt (nits), with a film sensitivity range of 16–500 GOST units.

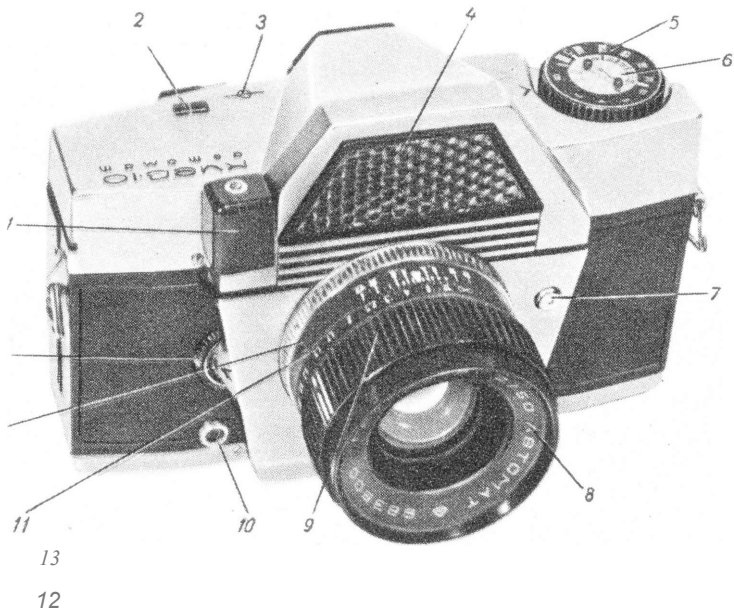
The camera features a manual override function that allows for the deactivation of the automatic system and the manual setting of the diaphragm aperture. When operating in this mode, the exposure metering system remains active.

The shutter is of the fan type, featuring metal blades. The shutter is cocked via a lever mechanism, which is interlocked with the film advance mechanism and the frame counter.

The viewfinder is a reflex type with continuous viewing (the mirror retracts only for the duration of the shutter release). Focusing is performed using a micro-raster screen and a matte ring located at the center of the field of view.

The viewfinder's design allows the user to compose shots while wearing eyeglasses.

The camera's back cover is hinged and swings open.



This camera has an "automatic" exposure mode.

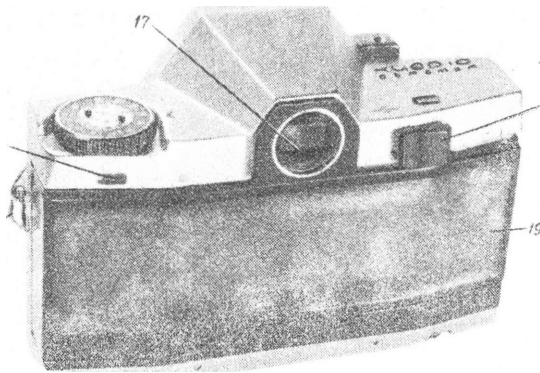
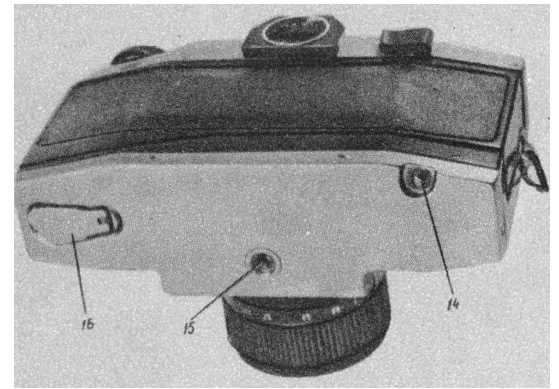
Fig. 1. General view of the camera:

- 1 — Shutter release button;
- 2 — Frame counter window;
- 3 — Mark indicating the position of the film plane;
- 4 — Photoelectric cell with a raster lens;
- 5 — Shutter speed setting ring;
- 6 — Film sensitivity setting dial;
- 7 — Lens lock;
- 8 — Lens;
- 9 — Lens focusing ring;
- 10 — Flash synchronization socket;
- 11 — Distance scale;
- 12 — Aperture scale for depth-of-field determination;
- 13 — Dial for manual aperture setting and disabling automatic mode.

The camera is equipped with a flash synchronization contact and a frame counter that automatically resets to zero when the back cover is opened. Figures 1, 2, and 3 illustrate the main components of the camera.

Fig. 2. Bottom view of the camera:

- 1—Film transport mechanism release button;
- 15—Tripod socket;
- 16—Rewind crank.



21

18

Fig. 3. Rear view of the camera:

- 17 — viewfinder eyepiece;
- 18 — shutter cocking and film advance lever;
- 19 — hinged back cover;
- 20 — strap lug;
- 21 — film movement indicator window.

TECHNICAL SPECIFICATIONS

Film width, mm. 35mm

Frame format, mm 24x36

Number of frames per roll. 36

Main lens Helios 81

Focal length, mm. 50mm

Relative aperture. f/2

Focusing range, m. 0.5m to infinity

Shutter speeds, s ½ to 1/1000 plus B

Viewfinder frame window dimensions, mm 22x44

Overall dimensions, mm 148 x 102 x 93

Camera weight (without case) 1080

Preparing the Camera for Shooting

Loading the Cassette

The cassette (Fig. 4) consists of three parts: the body, the spool, and the lid.


It must be loaded in complete darkness.

Before loading, the cassette must be disassembled; to do this, turn the lid counter-clockwise, remove it, and take out the spool.

Trim the end of the film and firmly secure it in the slot of the spool. While rotating the spool, wind the film tightly, holding it by the edges but without touching the emulsion layer—which faces the spool's core—with your fingers.

When wound correctly, the film should not extend beyond the flanges of the spool. During winding, do not attempt to tighten any loosely wound coils, as this may result in damage to the film's emulsion layer.

Insert the spool containing the film into the cassette body (Fig. 5a) and close it with the lid (Fig. 5b).



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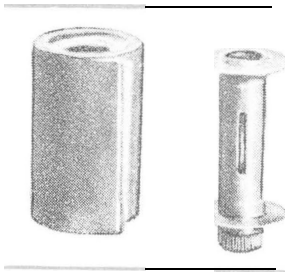


Fig. 4. Cassette

LOADING THE CAMERA

1. Remove the camera from its case.
2. Open the back cover 19 (see Fig. 3) by lifting the rewind crank 16 (see Fig. 2) and pressing the lock button located beneath it.
3. Insert the rewind crank into its socket.
4. Open the camera by swinging the back cover open on its hinge.

Fig. 5. Loading the Cassette

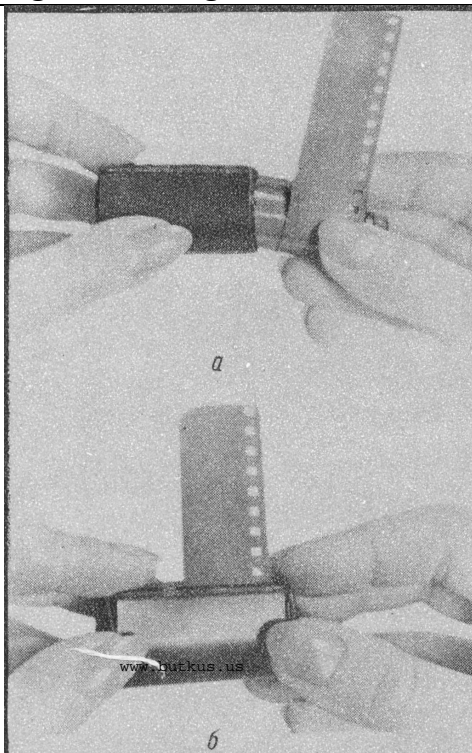


Image 6 loading the cassette

5. Insert the film cassette into the compartment, pushing it firmly against the upper edge (Fig. 6).
6. Thread the end of the film leader into the slot of the take-up spool and secure the film by engaging a tooth of the spool into a perforation hole (Fig. 7).

Before loading, rotate the spool in the direction indicated by the arrow on it to position the slot conveniently.

7. While holding the film and pressing it against the teeth of the transport sprocket with your left hand, advance the film by turning the shutter cocking lever; verify that one of the sprocket teeth has engaged a film perforation (Fig. 8) and that the film is winding onto the take-up spool.

8. Close the camera back.

9. Disengage the automatic aperture setting mechanism by rotating dial 13 (see Fig. 1) clockwise until any specific aperture value aligns with the index mark; this is necessary because the shutter release button may be locked under low-light conditions.

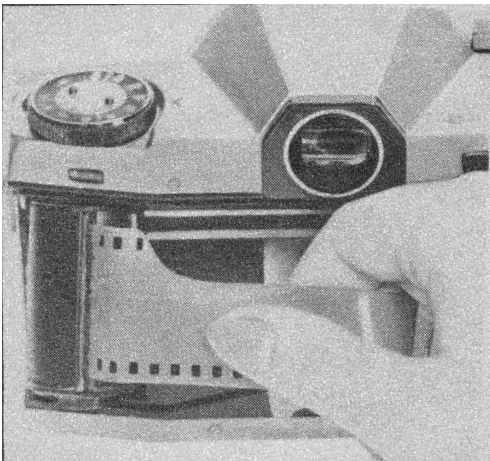


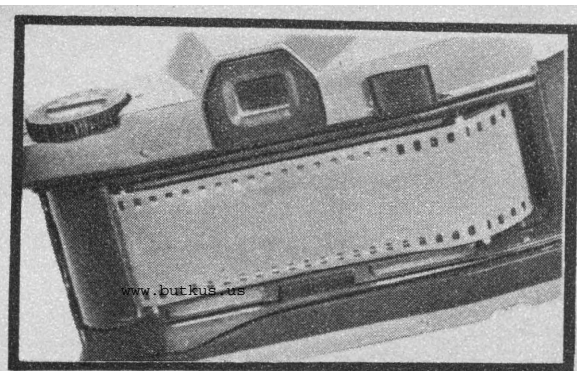
Fig. 8. Loaded camera

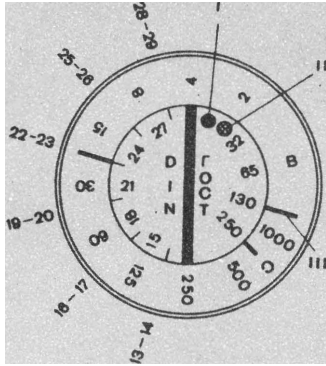
Fig. 9. Exposure and film sensitivity scale:

f — green dot (16 GOST units);

f1 — yellow dot (22 GOST units);

III — index for setting film sensitivity when shooting without a light filter





...films with a sensitivity of 130 units GOST (22–23 DIN) or 250 units GOST with a light filter. For all film sensitivity values, the scale is locked in place. The filter factor of the light filter used for shooting can be compensated for by the exposure metering device. To do this, when shooting with a light filter having a filter factor of 2, the film sensitivity value is set opposite the index marked "C".

12. Activate the automatic mode by turning dial 13 (see Fig. 1) counter-clockwise until the letter "A" aligns with the index.

TAKING PHOTOGRAPHS

The process of taking photographs with the "Kyiv-10" camera (Fig. 10) consists of the following operations: cocking the shutter, setting the desired shutter speed, framing and focusing, and releasing the shutter.

Fig 10. Imaging by the camera



The shutter is cocked by rotating the lever as far as it will go (Fig. 11). If the cocking operation is performed completely, the lever automatically returns to its original position; if not, it remains in an intermediate position. In this case, the bolt must be fully cocked.



Fig. 11. Cocking the shutter



Fig. 12. Exposure settings



Fig. 13. Focusing the lens

Shutter speeds are set (Fig. 12)—whether the shutter is uncocked or cocked—by rotating ring 5 (see Fig. 1) until the selected shutter speed value aligns with the index mark on the top cover.

Setting shutter speeds ranging from 1/1000 to 1/60 sec while the shutter is uncocked requires slightly greater effort than when the shutter is cocked, and may be accompanied by a faint clicking sound.

The "B" (Bulb) setting is selected by rotating ring 5 in a counter-clockwise direction only (the ring is locked between the 1/1000 sec setting and "B").

Focusing the lens (Fig. 13)—as well as setting it according to the distance scale—is accomplished by rotating lens ring 9 (see Fig. 1). At the center

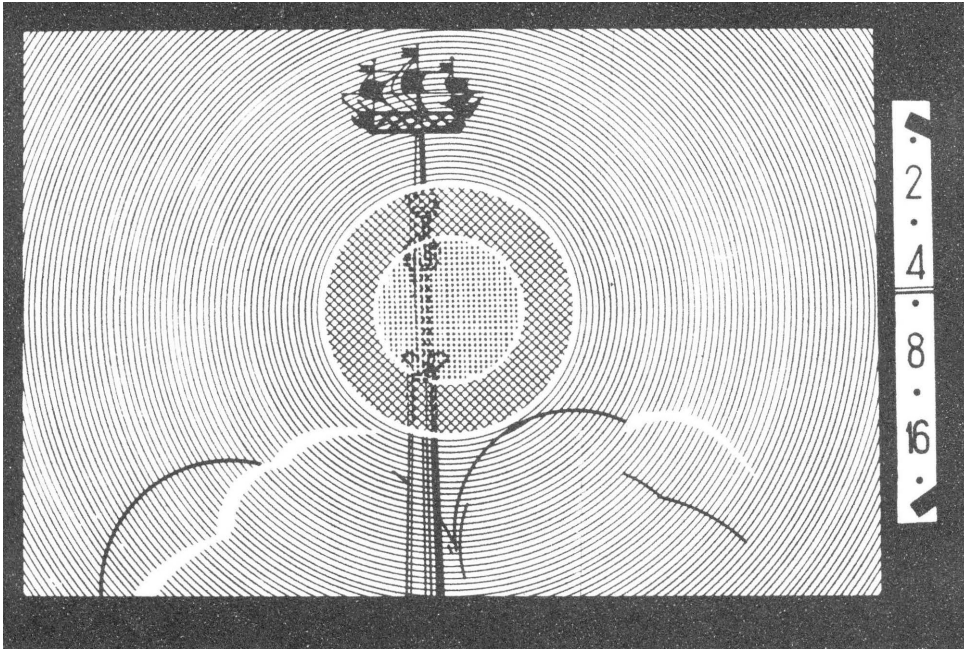
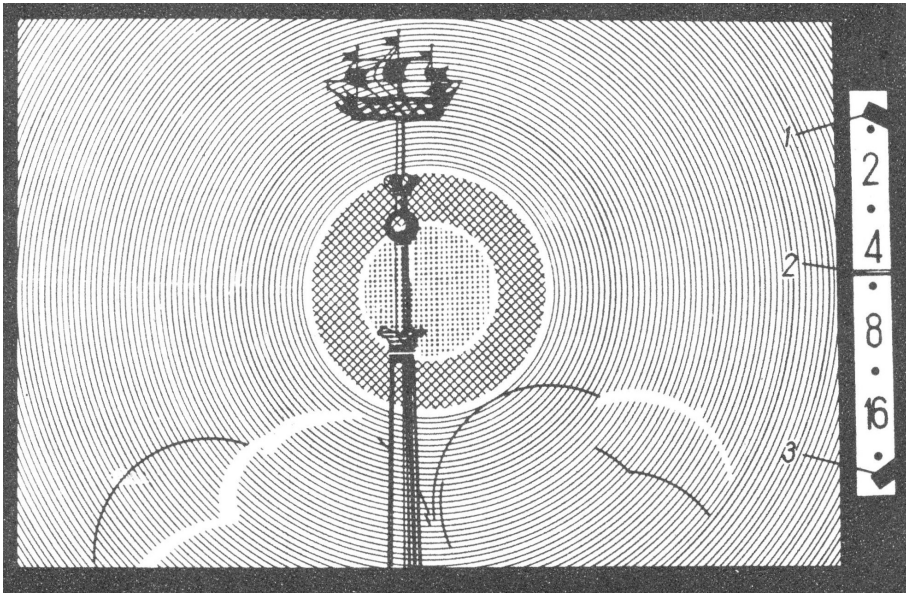


Fig. 14. Aiming - a — the camera is not focused;



Camera Focus:

6 — Camera focused;

1 — "Low Light" indicator; 2 — Galvanometer needle;

3 — "High Light" indicator

Within the field of view of the viewfinder eyepiece, a small circle (micro-raster) surrounded by a matte ring is visible. Lens ring 9 is rotated until the image—visible within both the circle and the matte ring—appears sharp. Subjects are framed by viewing the image through the viewfinder eyepiece.

The viewfinder eyepiece's field of view displays an aperture scale (Figs. 14a, 14b) and a galvanometer needle, which indicates the specific aperture setting that will be automatically selected when the shutter release button is pressed. The dots marked on the aperture scale correspond to the values: 1.4, 2.8, 5.6, 11, and 22.

Depending on the specific combination of the film's sensitivity rating and the selected shutter speed, the beginning and end sections of the aperture scale may be masked off by red indicators. If the needle rests beneath the indicator at the beginning of the aperture scale (the "low light" position), it signifies that there is insufficient light for photography. In this instance, the shutter release button is locked (the shutter will not fire). The button may also remain locked if the needle is positioned very close to the indicator. To take a photograph, it is necessary to increase the shutter speed until the needle deflects to align with the next aperture value.

If the needle rests beneath the indicator at the end of the aperture scale (the "excess light" position), the shutter release button remains unlocked. However, to obtain properly exposed (not overexposed) negatives, the shutter speed should be reduced. If the needle aligns with any of the markings within the section of the aperture scale located between the two indicators, a photograph may be taken by smoothly pressing the shutter release button 1 (see Fig. 1). At this point, the lens aperture stops down, the mirror automatically rises, and the shutter fires, after which the mirror lowers. Upon the return of the shutter button to its original position, the lens aperture automatically opens.

If the brightness of the subject being photographed falls outside the 16–16,000 nt range for which the exposure meter is designed, the needle will not emerge from beneath the indicator marks.

Depth of field is determined using the distance scale (11) in conjunction with the auxiliary scale (12); it can also be verified by observing the details of the subject on the matte ring within the viewfinder's field of view. To do this, you must press the shutter release button to stop down the lens aperture. If the shutter is cocked, the release button should be pressed gently (not all the way down) to prevent the shutter from firing.

If the current aperture setting (the value of which is visible in the viewfinder eyepiece) does not provide the required depth of field, you must adjust the shutter speed to achieve the necessary setting.

The exposure meter determines exposure based on the integral (cumulative) brightness of all objects falling within the frame. When photographing subjects that differ significantly in brightness within the frame (for example, a person against a snowy background), the exposure meter may fail to provide the correct exposure for the primary subject.

When photographing dimly lit subjects, or whenever exposure correction is required, the automatic exposure mechanism must be disengaged by rotating dial 13 (see Fig. 1) clockwise until the first dot aligns with the index mark. Dial 13 features the letter "A" (for "Automatic") and an aperture scale. The unmarked values on this scale correspond to the same aperture settings visible in the viewfinder eyepiece—specifically: 1.4, 2.8, and 5.6. 11 and 22.

Preliminary setting of the aperture, with the automatic mode disabled, is performed by rotating dial 13 until the selected aperture value aligns with the index mark. Upon pressing the shutter button, the lens automatically stops down to the set value. Fig. 15a illustrates the position of the dial for manual aperture setting with the automatic mode enabled; Fig. 15b shows the position with the automatic mode disabled and the aperture set to 16.

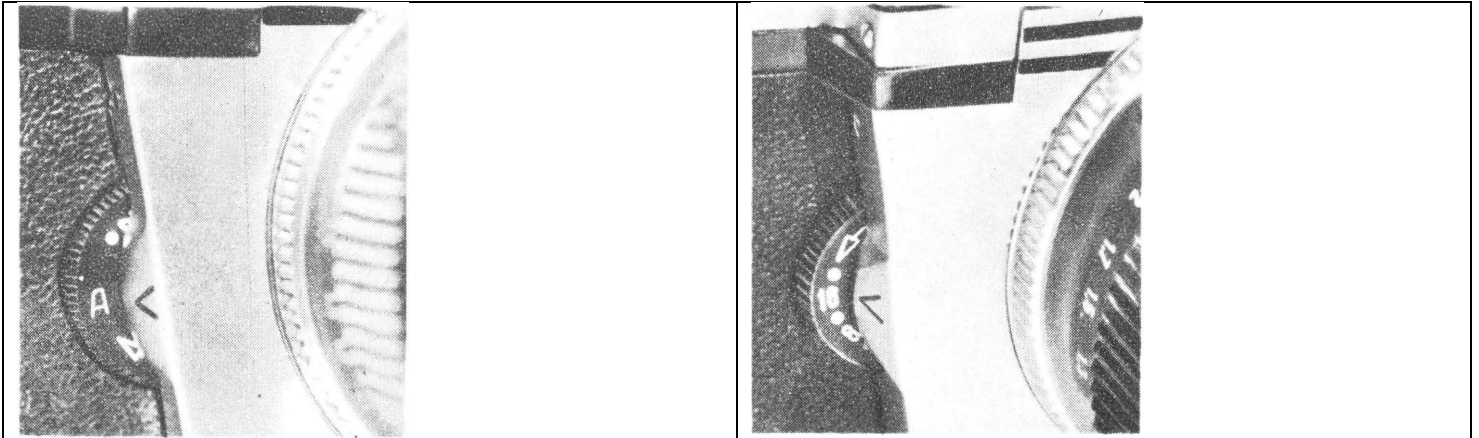
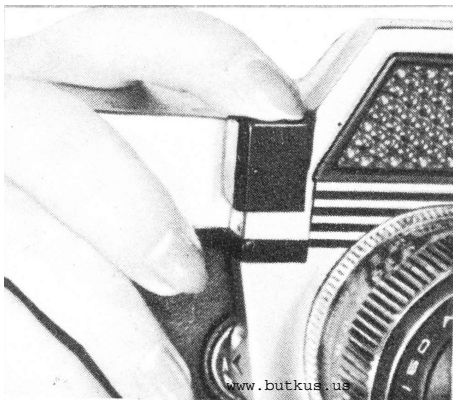


Fig. 15. Position of the dial for manual aperture setting:

a — with automatic mode enabled; b — with automatic mode disabled and aperture set to f/16.



Pic. 16. Shutter release

When shooting with the "B" (Bulb) shutter speed setting, the automatic exposure control mechanism must be disabled. If the automatic mode remains enabled, the camera will instead set the aperture corresponding to a shutter speed of 1.5 seconds.

The camera shutter should be released by pressing the shutter button smoothly and firmly all the way down, without tilting it (Fig. 16).

Do not press the shutter button if the winding lever 18 (see Fig. 3) is in an intermediate position rather than its home position, as doing so may result in damage to the camera.

Do not take photographs unless the automatic mode has been completely disabled (i.e., if the dial 13—see Fig. 1—is stopped in an intermediate position between "A" and the first dot, which corresponds to an aperture of f/22).

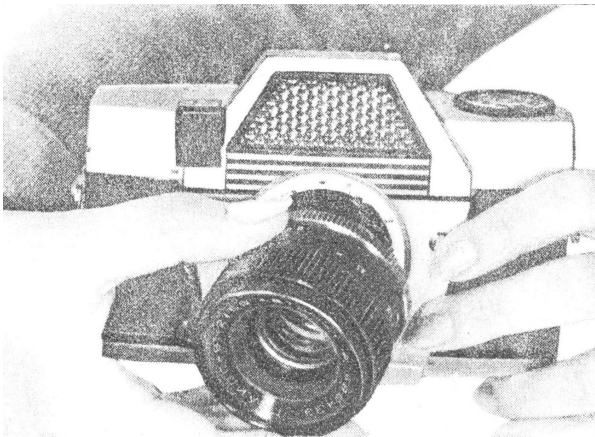


Fig. 17. Removable frame

FLASH PHOTOGRAPHY

The Kyiv-10 camera is equipped with a flash socket (10; see Fig. 1) for connecting a flash unit. Flash photography may be performed with the automatic mode disabled, using shutter speeds ranging from 1/60 to 1/2 second—settings which are highlighted in yellow on the shutter speed dial.

The camera kit includes a detachable frame (Fig. 17) that can be mounted within the guide slots on the eyepiece housing. This frame is designed to serve as a mounting bracket for certain types of flash units.



LENS CHANGING

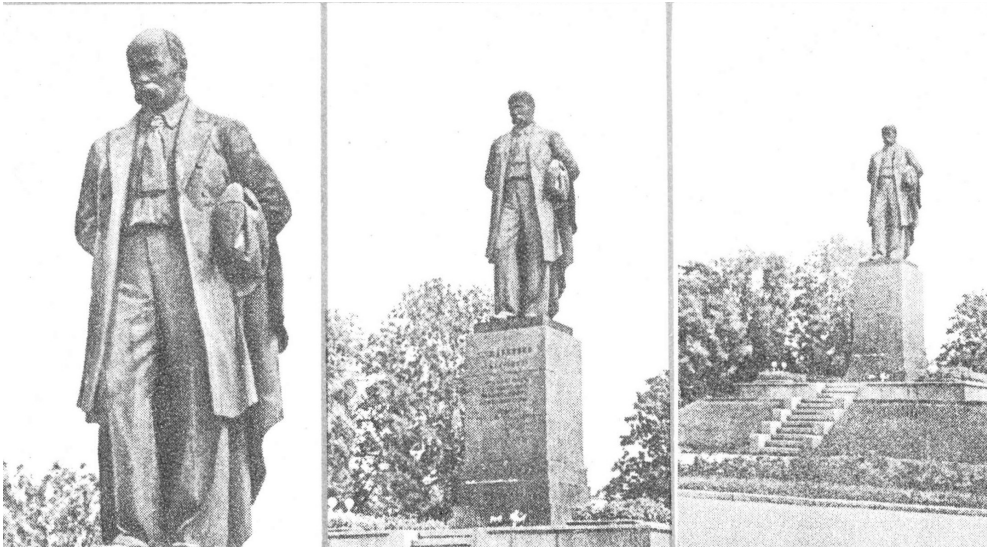
The design of the "Kyiv-10" camera is engineered for use with specialized interchangeable lenses.

To remove a lens, press the release button 7 (see Fig. 1) and, while rotating the lens counter-clockwise, withdraw it from the camera body.

To mount a specialized interchangeable lens (Fig. 18), it is necessary to align the red dot on its base with the corresponding dot on the camera body, press the release button, insert the lens into the camera's bayonet mount, rotate it clockwise until it stops, and release the button.

Then, by rotating the lens slightly in the reverse direction, verify that it is securely locked in place.

The lens release mechanism is kinematically linked to the stop for the "low light" indicator located within the viewfinder eyepiece's field of view (see Fig. 14); its position depends on the maximum aperture of the interchangeable lens.



When an interchangeable lens is installed, the arm of the indicator moves, overlapping the previous aperture value, thus taking into account the aperture value of the installed lens. For example, when installing a lens with a 1:2 aperture ratio, the arm of the "light ratio" indicator should overlap the extreme point corresponding to the 1:1 aperture value.

...and how, in this process, damage to the anti-reflective coating may occur.

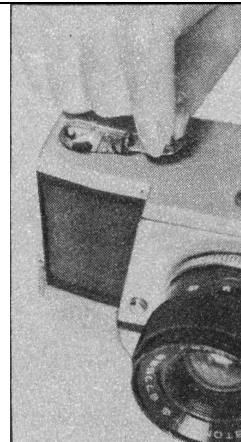
Do not expose the photocell of the exposure metering system to very bright light during intervals between shots. Prolonged exposure to bright light causes "fatigue" in the photocell, which temporarily affects the accuracy of its operation.

Keep the photocell window clean.

Contamination of the raster lens may compromise the accuracy of the automatic exposure control mechanism.

When bringing the camera indoors from freezing temperatures into a warm room, do not open it immediately; instead, leave it inside its case for a while to allow it to warm up.

Do not apply excessive force when handling the camera.



Pix 20, rewinding the film

The shutter blades are made of thin steel ribbon. When loading the camera, take care not to damage or deform them, as this could lead to shutter failure. If you discover any defects or damage, do not attempt to repair the unit yourself. Repairs and adjustments to the camera should be performed only by qualified specialists..