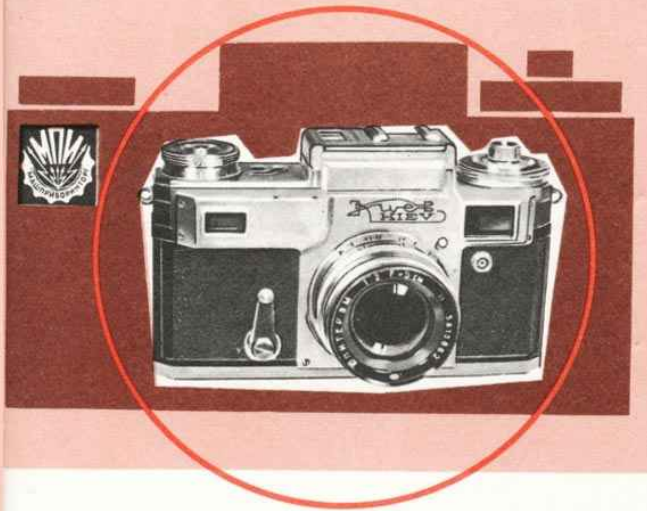

CAMERA

KIEV

Fig. 1, *a*. Camera "Киев-4" ("Kiev-4")

CAMERA

KIEV

INSTRUCTIONS

V/O MASHPRIBORINTORG ● USSR ● MOSCOW

The camera you have bought may slightly differ in appearance from the pictures presented in this booklet, since in manufacture the appearance and performance of the cameras are continuously improved

Fig. 1, *b*. Camera "Киев-4А" ("Kiev-4A")

APPLICATION

"Киев" ("Kiev") is a small-size high-quality camera intended for both amateurs and professionals. It can also be used in scientific research and technical photography.

Two models of "Киев" ("Kiev") camera are available: "Kiev-4" (Fig. 1, *a*) with a photoelectric exposure meter, and "Kiev-4A" (Fig. 1, *b*) without the exposure meter.

BASIC DATA

Frame size on the negative 24×36 mm. Loaded with a 1.6 m long film the camera will produce 36 pictures.

The shutter is of a slotted type with hinged metal curtains.
The shutter cocking mechanism is interlocked with the film rewind mechanism, which precludes double exposure of one and the same frame.

The coated lens "Юпитер-8М" with focal length $F=5$ cm and relative aperture 1 : 2 is used in the camera.

Focusing is effected with the aid of an optical range finder within 0.9 m to ∞.

View finding is effected by use of an optical view finder. The view finder and the range finder are combined and have one eyepiece.

The camera is fitted with a self-timer providing a 9—15 second lapse before shutter opening at any preset shutter speed.

The camera back is removable.

The "Kiev-4A" model is fitted with a film speed indicator, the "Kiev-4" model — with a high-sensitive small-size photoelectric exposure meter.

Both models of "Kiev" camera have a synchrocontact for operation with single-flash and multi-flash lamps.

For convenience in diaphragm setting after lens focusing, the diaphragm scale is marked twice on the opposite sides of the ring.

The general view of the "Kiev-4A" camera is presented in Fig. 2, the "Jupiter-8M" lens is shown in Fig. 3.

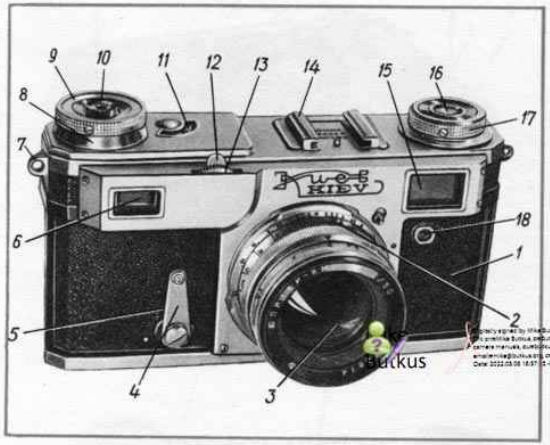

Fig. 2. Camera general view:

1 — camera housing; *2* — lens fixing spring; *3* — lens; *4* — self-timer lever; *5* — self-timer engaging button; *6* — range finder window; *7* — lug for strap; *8* — shutter speed scale; *9* — shutter cocking knob; *10* — release button; *11* — frame counter; *12* — lever fixing lens in ∞ position; *13* — disc for lens focusing; *14* — frame to receive additional elements; *15* — view finder range finder window; *16* — film-in-use speed indicator; *17* — film rewind knob; *18* — synchrocontact receptacle

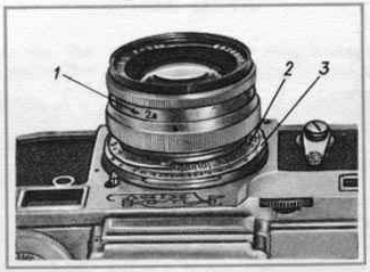

Fig. 3. "Jupiter-8M" lens:
1 — diaphragm ring; *2* — distance scale; *3* — depth of field scale

CAMERA LOADING

PREPARING THE CAMERA FOR LOADING

1. Remove the camera from the case, having undone the buttons and the screw on its bottom.

2. Swing two clips *3* (Fig. 4) of the camera back locks and give them half a turn in the directions indicated in Fig. 6.

3. Move camera back *2* (Fig. 5) slightly to the camera bottom and detach it. In so doing be sure to hold the camera with its upper cap down, lest the cartridge and the take-up spool should fall out.

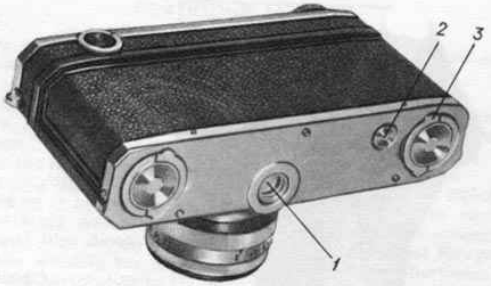

Fig. 4. Camera bottom view:
1 — tripod nut; *2* — film transport mechanism cut off button; *3* — camera back lock clip

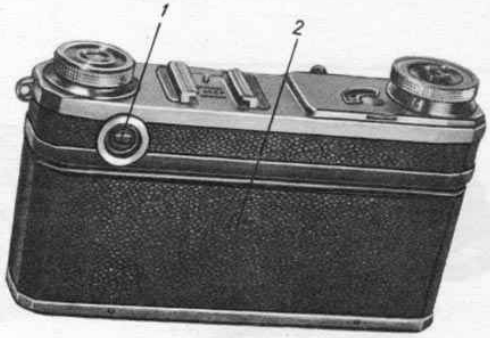

Fig. 5. Camera rear view:
1 — range finder/view finder eyepiece; *2* — camera back

Fig. 6. Opening locks on camera back

Fig. 7. Removing camera back

CARTRIDGE LOADING

The cartridge (Fig. 8) comprises a housing, a spool and a cap.

It should be loaded in complete darkness.

Prior to loading, disassemble the cartridge. To this end, turn the cap counterclockwise, remove it and take out the spool.

Cut the film end and fix it tightly in the spool slots.

Turning the spool counterclockwise, wind the film tightly, holding it by the edges and avoiding to touch the emulsion layer which shall face the spool tube. The properly wound film should not protrude beyond the spool flanges. While winding the film do not try to tighten the loosely wound parts of it as it may damage the film emulsion layer.

Insert the spool with the film into the cartridge housing (Fig. 9), leaving the end of the film (about 5 cm long) and cover it with the cap (Fig. 10).

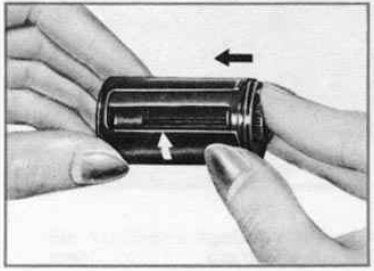

Fig. 8. Cartridge

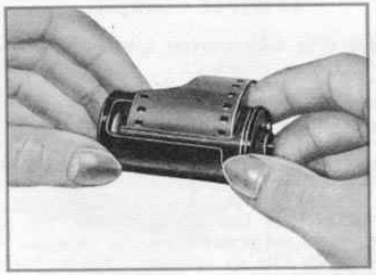

Fig. 9. Cartridge loading

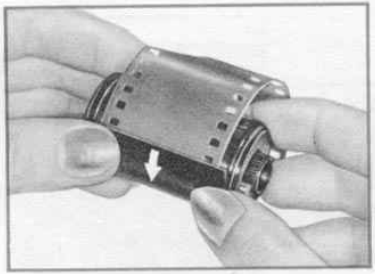

Fig. 10. Closing cartridge with cap

CAMERA LOADING

The camera can be loaded in daylight, but poorly-lit places are preferable. The procedure is as follows:

1. Fix the loose end of the film in the take-up spool.

2. Place the cartridge into the left-hand seat and the take-up spool into the right-hand seat of the camera housing; see to it that the film perforation engages with the teeth of the film transport drum (Fig. 11).

The emulsion-coated side of the film should face the lens.

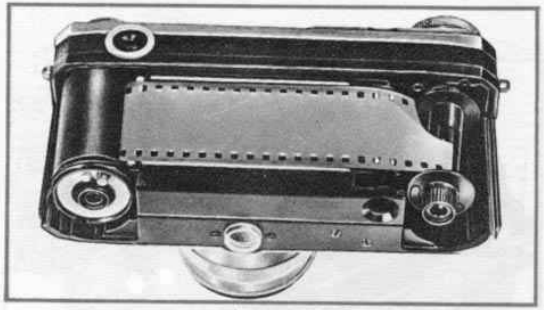

Fig. 11. Camera loaded with cartridge and take-up spool

3. Close the camera (Fig. 12). Place the camera back so that its edges enter the slots in the camera housing. Holding the edge of the film with the thumb of your left hand, push the camera back as far as it will go, turn the clips of the locks and release them.

In the process of camera loading the film loose end is exposed. To advance the non-exposed film to the frame window, cock the shutter twice and release the button every time.

If the camera is loaded properly, the film rewind knob will rotate when the shutter cocking knob is turned.

If the film is loosely wound on the cartridge spool, the rewind knob will be immobile while the first frames are being shot.

Fig. 12. Closing camera back

4. Align the frame counter zero with the index on the cover, turning the protruding part of the disc (Fig. 13).
5. Set indicator *16* (see Fig. 2) of film-in-use speed to the proper value by turning the scale button and finding in film rewind knob *17* the appropriate figure. Engraved on the scale are figures corresponding to the speed of the film in GOST and ASA units and coded symbols for colour film:

for daylight

for artificial lighting

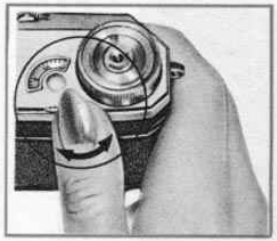

Fig. 13. Zero-setting frame counter

SHOOTING

Shooting pictures runs down to the following procedures: shutter cocking, exposure time setting, diaphragm setting, view finding and focusing, shutter release.

Shutter cocking is effected by turning the shutter knob clockwise (one complete turn to the stop); exposure time setting is attained by turning the same knob, pulled out this time, till the black dot on it is aligned with the desired exposure time value (Fig. 14). In this position the knob is lowered till fixed.

With the shutter cocked, exposure time changing from lower to higher values demands for somewhat greater effort than in the reverse direction.

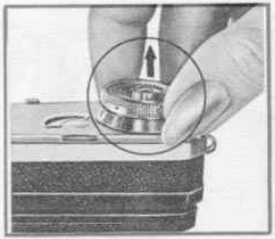

Fig. 14. Shutter speed setting

It is recommended:
when changing from higher to lower exposure time settings to turn the shutter cocking knob so that the black dot is somewhat farther than the selected exposure time value and after that, rotating the knob in the reverse direction (clockwise), to align it with the desired mark and lower the knob;
set the exposure time after shutter cocking.

The diaphragm (Fig. 15) is set by turning ring *1* (see Fig. 3) which is fixed when the index is aligned with any value selected.

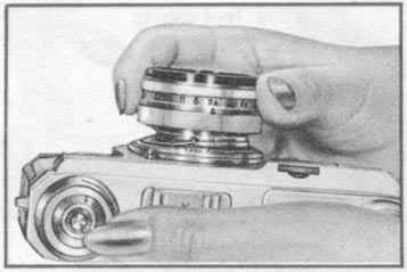

Fig. 15. Lens diaphragming

Focusing and range finding (Fig. 16) are effected by rotating disc *13* (Fig. 2), which is possible only after pressing lever *12* fixing the lens in the "∞" (infinity) position.

Fig. 16. Focusing

In the middle of the field of vision of the range finder/view finder you will see a brighter rectangular area where the subject viewed has a double image.
Focusing consists in combining the two images into one (Fig. 17).
It is recommended to combine the two images within the centre of the field of the smaller rectangular area.
If the distance to the subject to be photographed is known, focusing can be effected by using the distance scale.
To this end, turn disc *13* (Fig. 2) till the desired mark on distance scale *2* (Fig. 3) is aligned with the index dot of scale *3*.
The depth of field is determined by the distance scale depending on the distance to the subject to be photographed and on the diaphragm selected.

N o t e. Shooting without the range finder is recommended with considerable lens diaphragming, when the errors in determining the distance visually are corrected by the lens depth of field.

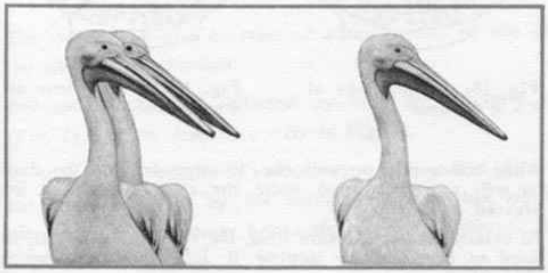

Fig. 17. Combining images

Example. The $F=5$ cm lens is set for a sharp image of a subject located at a distance of m from the film plane. With diaphragm value 8 all the subjects located within 2.5 to 10 m will produce a sharp image (Figs. 18, 19).

Note. All the distances to the subject are counted off from the camera film plane.

View finding is effected through the range finder/view finder eyepiece while focusing the camera.
Within the eyepiece field of vision you will see exactly the subject that will be obtained within the negative.
Shutter release (Fig. 20) is effected by depressing smoothly shutter release button *10* (Fig. 2).

Fig. 18. Setting lens at 2.5 m distance

Fig. 19. Setting lens at 4 m distance

When taking pictures with the "B" exposure time the shutter will remain opened while the release button is depressed.

To obtain longer exposure time, the release button can be fixed as depressed by turning it fully counterclockwise (Fig. 21).

The shutter will be closed after the release button is turned in the reverse direction till the red dot on it is aligned with the dot on the shutter cocking knob, and the finger is removed from it so that it is no longer depressed.

Fig. 20. Shutter release

Fig. 21. Shooting at low shutter speed

The shutter can also be released automatically by use of the self-timer mechanism.

Self-timer cocking is effected by fully turning lever *4* (Fig. 2). For the procedure refer to Fig. 22.

To actuate the self-timer move button *5* (see Fig. 2) in the direction shown by the arrow on it. The time lapse offered by the self-timer before the shutter is released is within 9 to 15 s.

Exposure time "B" with the self-timer engaged is within 1 to 3 s for different cameras (it is advisable to check it using a stopwatch prior to operating the camera).

Fig. 22. Self-timer lever cocking

UNLOADING THE CAMERA

To remove the exposed film from the camera, rewind it back into the cartridge. To this end, depress the button disengaging the film transport mechanism and turn the film rewind knob in the direction shown by the arrow (Fig. 23).

Note. In the "Kiev-4" camera the film rewind knob should be previously pulled out.

Rewinding over, remove the camera back, take out the cartridge and pull the film end out of the take-up spool.

Prior to closing the camera, examine it and, if required, clean it with a brush or wipe it with a clean napkin.

Fig. 23. Film rewind

APPLICATION OF EXPOSURE METER

As distinct from the "Kiev-4A" camera, the "Kiev-4" (Fig. 1, *a*) model is fitted with a photoelectric exposure meter arranged in the upper part of the camera.

As its name implies, the exposure meter is designed to set the exposure time. It consists of the following main elements: the photocell located behind ribbed plate *1* (Fig. 25), calculator *2*, galvanometer with pointer *1* (Fig. 24) and scale *2*.

The calculator is fitted with an exposure time scale arranged on ring *5*, as well as with film speed scale in ASA and GOST units (the scale is combined) and diaphragm scale located on disc *4*.

To select the exposure time, proceed as follows:
rotate disc *4* to set the film speed value against index ▲ on disc *3*. If the camera is loaded with a film whose speed is not indicated on the scale (e. g., 45 units to GOST or ASA), align with the index ▲ the middle of the disc section between the 32 and 65 figures;
aim the camera at the subject to be photographed and press the button to open the photocell cover (see Fig. 25);
set the galvanometer pointer to index ◆ of galvanometer scale *2* by turning ring *5* of exposure time scale (Fig. 24);
referring to exposure time and diaphragm scales of the calculator, determine the required exposure time. The red figures on the exposure time scale denote seconds, the black figures — second fractions;

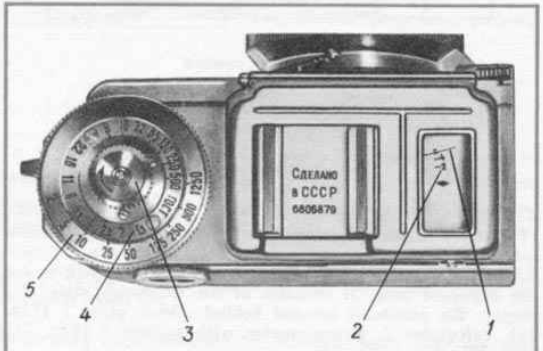

Fig. 24. Exposure meter top view

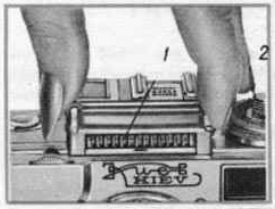

Fig. 25. Opening photocell cap

close the photocell cover and turn the exposure time scale ring fully clockwise.

In addition to the ◆ index, galvanometer scale *2* also has figures 2 and 4 which shall be used if the galvanometer pointer is not aligned with index ◆ when the exposure time is turned fully counterclockwise. This being the case, the value of the exposure time obtained shall be multiplied by the figure at which the galvanometer pointer has stopped.

The photoelectric exposure meter is a precise and complex instrument that demands for extreme care in handling. Avoid sharp impacts and jolts!

Open the photocell cover only for the time of exposure time setting. Never aim the exposure meter with the cover open directly at the sun!

FLASH PHOTOGRAPHY

The "Kiev-4" and "Kiev-4A" cameras are fitted with synchrocontacts to apply single-flash and multi-flash lamps provided with plugs conforming to the size of the synchro-contact receptacle (Fig. 26).

Flash photography should be carried out at exposures marked on scale *8* (see Fig. 2) by green colour when the frame window is fully opened by the shutter.

With the shutter not cocked, the camera electric circuit contacts are closed; with the shutter cocked, they are open. Thus, when operating the flash lamp, immediately cock the shutter after having exposed a frame.

Connection and disconnection of flash lamps, as well as installation of a new lamp (when using a single-flash lamp) shall be done with the shutter cocked.

Flash photography should be effected in strict conformity with the instructions furnished with the flash lamps.

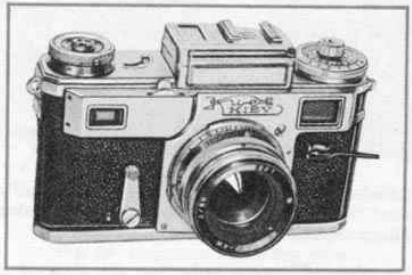

Fig. 26. Flash lamp connection

OPERATION WITH INTERCHANGEABLE LENSES

The following lenses are issued additionally for the "Kiev" camera:

Lens type	Focal length, cm	Relative aperture	Description
Jupiter-11	13.5	1 : 4	Telephoto lens
Jupiter-9	8.5	1 : 2	Portrait lens
Jupiter-12	3.5	1 : 2.8	Wide-angle lens
Jupiter-3	5.0	1 : 1.5	Fast lens

The interchangeable lenses are installed and fixed on the camera instead of the main lens.

The main working lens "Jupiter-8M" and the interchangeable lens "Jupiter-3" are installed on the bayonets of the inner ring of the focusing mechanism, while all the other lenses are mounted on the bayonets of the immobile outer ring on which you will find the scales for depth of field setting.

To remove the "Jupiter-8M" or "Jupiter-3" lens, depress the spring fixing the lens so as to make it move down, below the red protrusion, and, turning the lens clockwise till the red dots on the lens and the front cover of the camera coincide, take the lens out pulling it in the direction of its optical axis (Fig. 27).

To install the "Jupiter-8M" or "Jupiter-3" lens keep to the reverse order of operations.

Note. When installing or removing any lens, be sure that the distance scales of the camera and lens are set to ∞ (infinity).

Fig. 27. Removing lens

The "Jupiter-11", "Jupiter-9" and "Jupiter-12" lenses possess their own distance scales, depth of field scales and diaphragm scales.

Prior to installing interchangeable lenses "Jupiter-9", "Jupiter-11" or "Jupiter-12" on the camera, remove the cap covering the back of the lens, and then fit it onto the outer bayonet ring (Fig. 28) so that the red dot on the lens ring is aligned with the red dot on the camera front cover, whereupon turn the lens counterclockwise till a click is heard.

The lens is properly installed if disc *13* (Fig. 2) used in focusing rotates as the distance scale ring of the lens is rotated.

To remove the interchangeable lenses, keep to the reverse order of operations.

When taking pictures with the application of interchangeable lenses (Fig. 29) view finding should be effected with the aid of a multi-purpose or a special view finder mounted on frame *14* (Fig. 2).

Focusing is effected by use of the camera range finder, but in this case the lens distance ring should be rotated instead of disc *13*, to decrease the load on the camera mechanism.

Fig. 28. Installation of $F=13.5$ cm lens

Fig. 29. Shooting with $F=13.5$ cm lens

ADDENDA TO KIEV INSTRUCTIONS

Warning: Time lock release.

Do not rotate the shutter release button. Apply only direct 'push-button' action to avoid engaging 'T' lock. (If release button has been locked down it will give the impression the film wind mechanism is faulty).

Setting of Exposure meter calculator or film speed reminder dial.

GOST (ГОСТ) and ASA film speed ratings though basically similar do not correspond numerically with those of popular films sold in the U.K. (The GOST speed range runs as follows 8-11-16-22-32-45-65-90-130-180-250-350-500). In practice set ASA figure nearest in value to that on the GOST scale. Intermediate speeds being set exactly halfway between those engraved. Some examples of popular film ratings and their equivalents are given in the table overleaf.

FILM	ASA	GOST
Kodachrome II	25	22
Agfacolour CT 18	50	45
Kodachrome X	64	65
Kodacolour X	80	90
Ilford FP4	125	130
HP4 or Tri-X	400	350

Flash synchronisation

For "single-action lamps" read flash bulbs.
For "multiple-action lamps" read electronic flash.

Reloadable Cassettes

Reloadable cassettes, although mentioned in the instruction book, are no longer supplied with this camera