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COMPACT

CAMERA

LC-A

**LOMO
COMPACT
AUTOMAT**

OPERATION
MANUAL



Fig. 1

1. PREFACE

LC-A (LOMO COMPACT-AUTOMAT) is a miniature scale camera with telescopic viewfinder and automatic program exposure working. The camera operates in temperature range from minus 15 to +45° C, direct solar radiation and precipitation excluded.

The camera is powered from a d. c. source, type SR-44P (CЦ0.18-Y2), S-76. Note. When using another power source with temperature operation range lower than that of your camera, the camera temperature operation range is to be limited with that of the power source.

Camera LC-A has some distinctive features. It is so small that you can carry it in your pocket or in a handbag. Automatic exposure working is ensured in a wide range of object brightnesses. The camera is provided with a device protecting the photoobjective and viewfinder objective from mechanical damages and contaminations in storage.

The camera is provided with electromechanical program shutter controlled with electronic exposure meter ensuring automatic working of exposures.

Camera viewfinder is telescopic. A luminous picture limiting frame with a parallax mark for taking at near distances, a light indicator for control over power cells energetic level, a light indicator warning of expected shutter speeds longer than 1/30 s are in the field of vision of the viewfinder.

A wide-angle high power objective «Minitar 1» is rigidly built in the camera which considerably extends opportunities of the camera (photographing of architectural subjects and landscapes at short distances, photographing of landscapes in small premises and so on). In this case, some vignetting (decrease of brightness and definition towards the margin of the field) is possible.

Focusing is carried out by the distance scale and by symbols visible in the viewfinder field of vision.

For photographing with a flash bulb, a manual diaphragm setting in the range of 2.8 to 16 is provided. At switching-over from automatic operation («A») to manual diaphragm setting, a shutter speed 1/60 s is set.

Contact «X» is used for synchronization of the shutter with the flash bulb.

Film advance and shutter cocking are carried out simultaneously by means of a handwheel with 360° rotation angle. Frame counter counts num-

ber of frames taken, and it is set to initial position automatically as soon as the camera back is opened.

Rewind crank is of a tape-measure type. For rewinding, film advance gear disengagement knob is to be fixed in the depressed position.

Provision is made in the camera for a special motor attachment for automatic film transport.

2. SPECIFICATIONS

Film accepted, mm	35
Frame size, mm	24×36
Number of frames	36
Photographic objective «Minitar 1»:	
focal length, mm	32
relative aperture	f/2.8
field of vision angle	63°
	5

focusing range, m	from 0.8 to ∞
stopping down limits	from 2.8 to 16
Electromechanical program shutter is controlled with electronic exposure meter.	
Shutter speeds, s	from 1/500 to 2
Operation range of exposure meter with 100 ISO film light sensitivity, cd/m ²	from 0.6 to 19000
Range of film light sensitivity, ISO	from 25 to 400
Telescopic shutter with luminous picture-limiting frame with parallax mark for taking at a distance of 0.8 m.	
X-type synchronization with flash bulb.	
Shutter speed for taking with the flash bulb, s	1/60
Tripod socket thread	1/4"
Overall dimensions, mm, not over	107×68×43.5
Mass, kg, not over	0.25

3. DELIVERY SET

3.1. Camera LC-A	1
3.2. Shoulder strap	1
3.3. Power cell SR-44P (CЦ0.18-Y2)	3
3.4. Operation manual	1
3.5. Box	1

4. DESIGN

Camera parts and main controls are given in Fig. 1—5.

- 1 — guard cover
- 2 — guard curtains
- 3 — photographic objective
- 4 — light-limiting device of photodetector

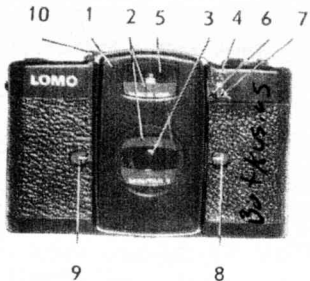


Fig. 2

- 5 — viewfinder
- 6 — film light sensitivity setting knob
- 7 — film light sensitivity window
- 8 — objective focusing key
- 9 — manual diaphragm setting and operation modes key
- 10 — release knob
- 11 — decorative plug
- 12 — frame counter window
- 13 — flash bulb joint
- 14 — guard curtains control key
- 15 — film advance gear disengagement knob
- 16 — cells container cover
- 17 — cells container

- 18 -- tripod socket
- 19 -- shoulder strap
- 20 -- motor attachment connector
- 21 -- take-up spool shaft output
- 22 -- shutter cocking and film feed

lever

- 23 -- viewfinder inspection window
- 24 -- rewind handwheel
- 25 -- rewind knob
- 26 -- rewind handwheel axle yoke
- 27 -- cassette receptacle
- 28 -- film position limiters
- 29 -- film advance gear
- 30 -- take-up spool
- 31 -- pressure plate
- 32 -- camera back

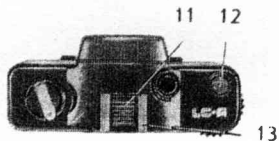


Fig. 3

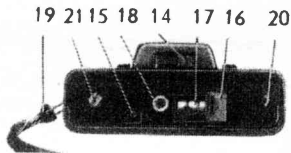


Fig. 4

25 24 26 27 28 23 29 22 30 32 31

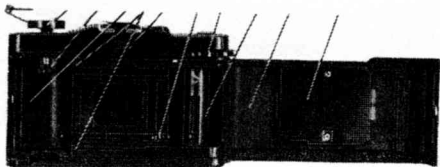


Fig. 5

5. PREPARING FOR OPERATION

5.1. Installing and Checking the Cells

To install the power source into the camera, move cover 16 (Fig. 4) in a direction pointed with an arrow. Put the cells into the container so

that sign «+» on the cells is looking towards sign «+» on the camera container. Close the container cover. Watch attentively over correct setting of the cells.

The cells installed, check them for serviceability. For this aim, move curtains control key 14 so as is shown in Fig. 6. Open the viewfinder. Looking through the inspection window 23 (Fig. 5), press down the release knob 10 (Fig. 2) until it is stopped slightly.

If the cells are serviceable and inserted in a correct way, a red-colour indicator should shine at the upper left corner of the viewfinder (Fig. 7). If the indicator doesn't shine, check up whether the cells are inserted in a correct way and contact areas are clean. If the

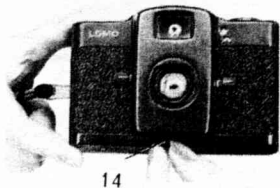


Fig. 6

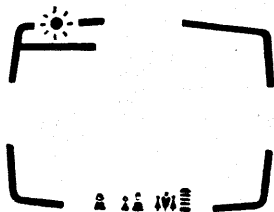


Fig. 7

indicator doesn't yet shine, replace all the cells.

To check up energetic level of power cells in the course of taking, press down the release knob. If, with release knob pressed, the indicator doesn't shine, stop taking and replace the power cells.

5.2. Camera Loading

Camera LC-A is rated for 35-mm perforated film loaded in a standard cassette.

To insert the cassette with film into the camera, swing out knob 25 (Fig. 5) of handwheel 24 and pulling it upward as far as it goes open the camera back 32. Put the cassette into receptacle 27 so that a film leader is facing

to the right. Lower handwheel 24 so that yoke 26 enters the cassette spool lug.

Put the film leader (Fig. 8) into the slot of the take-up spool so that film perforation engages into mesh with a tooth of take-up spool 30 (Fig. 5). Holding the cassette with film with your hand and rotating handwheel 22 with the other hand, take up film slack. Make sure the film is positioned between limiters 28, that it is engaged with gear 29 and is fixed reliably at take-up spool 30.

If handwheel 22 has turned up to stop while the film slack has not yet taken up, press down release knob 10 (Fig. 2) and continue taking up the slack.

ATTENTION! If the objective and viewfinder are covered with the guard cur-

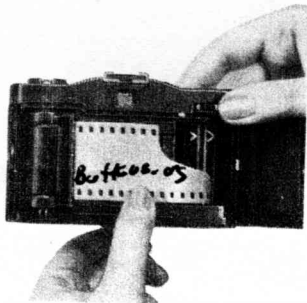


Fig. 8

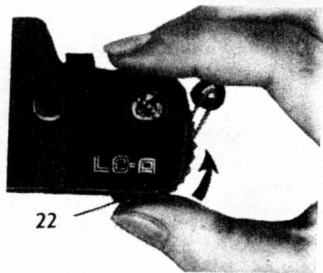


Fig. 9

tains, release knob 10 is interlocked. Never press the release knob when the guard curtains are shut. To unlock it, apply key 14 (Fig. 4) to open protective curtains of the taking objective.

After the slack is taken up, close camera back 32 (Fig. 5) and press it tightly to the body so that the back is fixed.

Turn handwheel 22 (Fig. 9) up to stop and press the release knob. Repeat the procedure twice or thrice till digit «1» appears in the frame counter window against the index. While pulling the film, watch rewind handwheel 24 (Fig. 5). If the camera is loaded with the film correctly, handwheel 24 should rotate at rotation of handwheel 22.

5.3. Setting Value of Film Light Sensitivity

After installing the cassette with film into the camera, it is required to introduce into the exposure meter a value of light sensitivity of film applied (the value given on the packing). For this aim rotate film light sensitivity setting knob 6 (Fig. 2) till a value required appears in window 7 as is shown in Fig. 10. For subsequent operation, loading the camera with a new film, it is required to introduce a new value of light sensitivity.

The light sensitivity scale in the camera has numberings 25, 50, 100, 200, 400 ISO. If there is no light sensitivity value of your film on the scale, set the value making use of Table 1.

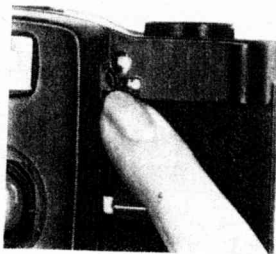


Fig. 10

Table 1

Values on the scale of camera film light sensitivity	Light sensitivity values of films in use (GOST/ISO, ASA, ISO)
25	20— 25— 32
50	40— 50— 64
100	80—100—125
200	160—200—250
400	320—400—500

Exact correlations of light sensitivity values are given in thick print in the Table.

5.4. Focusing and Framing

Objective in the LC-A camera can be focused by distance scale and by symbols visible in the viewfinder.

To focus by distance scale, estimate camera-to-object distance and bring key 8 (Fig. 2) to corresponding position with respect to distance scale 33 as is shown in Fig. 11.

Positions of key 8 (Fig. 2) with respect to distance scale 33

(Fig. 11) are duplicated with setting the viewfinder movable pointer against the corresponding symbol. Distances can be set, therefore, by looking through the viewfinder inspection window. Symbols, their values and corresponding taking distances are given in Table 2.

Picture-limiting frame 1 (Fig. 12) is provided to find borders of an image in the viewfinder field of vision.

While taking at a distance of 0.8 m watch that upper border of your subject doesn't trespass parallax compensation line 2. While taking at other distances, subject borders should not go beyond the picture-limiting frame.

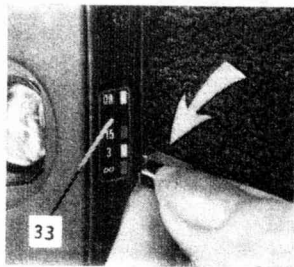


Fig. 11

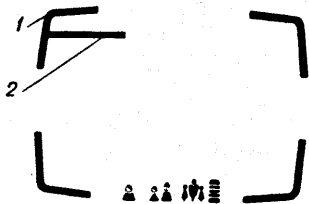






Fig. 12

Table 2

Symbol	Distance, m	Purpose
	0.8	Portrait
	1.5	Portrait group
	3.0	Group
	∞	Landscape

6.1. Automatic Taking

Before taking, draw apart curtains 2 (Fig. 2) covering objective 3 and viewfinder 5.

Bring diaphragm setting key 9 to position «A».

Look at window 7 to check up whether film sensitivity value is set correctly.

Cock up the shutter with complete revolution of handwheel 22 (Fig. 5).

Check up for serviceability of the power source slightly pressing down release knob 10 (Fig. 2) and watching the indicator in viewfinder inspection window 23.

Focus the objective and find subject borders by means of the picture-limiting frame.

Check to see that you have not shut with your fingers light-limiting device 4 and objective 3.

Press release knob 10 up to stop. Release the knob only after shutter responding.

6.2. Taking with a Flash Bulb

With slight depressing of the release knob, you can see in the viewfinder a red-colour indicator at the upper right corner simultaneously with the red-colour indicator at the upper left corner. Its luminescence is a witness of an exposure time longer than $1/30$ s.

In this case, in order to avoid somewhat blurred image on the film, it is necessary to ensure steadiness of the camera, i. e. to carry out taking from a support, from a tripod or to apply a flash bulb.

Camera design is rated for application of the flash bulb with cableless connection.

Operation mode of the camera with the flash bulb differs from automatic operation only in determination of diaphragm value and input of this data into the camera mechanism. Shutter speed of $1/60$ s is set automatically when diaphragm values from 2.8 to 16 are set. To determine diaphragm value, divide the flash bulb guide number by an object distance

value in metres. A result obtained is the diaphragm value required for taking with the flash bulb.

Put key 9 (Fig. 2) against the calculated diaphragm value as is shown in Fig. 13, and bring key 8 (Fig. 2) to a corresponding position with respect to distance scale as is shown in Fig. 11. The camera is ready for taking.

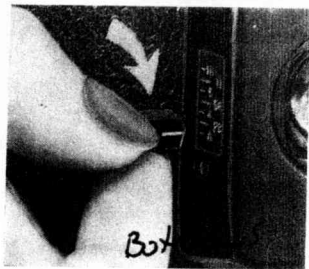


Fig. 13

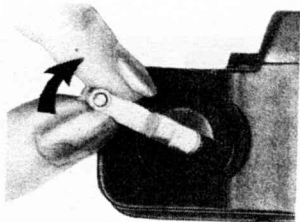


Fig. 14

7. FRAME COUNTER

The frame counter operates on the addition principle and shows number of frames taken. It is advisable to take a first picture when counter digit «1» is against the index. Numbers «12», «24», «36» and the initial point on the frame counter scale are marked yellow.

With the camera back open, the frame counter is set to initial position automatically.

8. FILM ADVANCE AND TAKING OUT

Cocking of the shutter and advance of the film are carried out in the camera simultaneously, with complete revolution of handwheel 22 (Fig. 5). Sometimes, however, the complete revolution of handwheel 22 is impossible because the film end is lacking for a full frame.

Don't force the handwheel in this case, otherwise the film can break loose from the spool core.

Press the film advance gear disengagement knob 15 (Fig. 4). Hinge away knob 25 (Fig. 5) and turn it in a direction pointed with the arrow (Fig. 14).

Rewind over, you will feel a slight jerk of the film and an easier run of handwheel 24 (Fig. 5).

Pull handwheel 24 upwards taking hold on knob 25. At the end of handwheel run, when the camera back is opened, take out the cassette with the film.

Now the camera is ready for subsequent loading with film.

II. OPERATION INSTRUCTIONS

Don't allow heating of your camera, never leave it in the sun, on the hot sand etc as it can cause damage of the film, power source or electronic system and lead thus to a wrong exposure.

Pay attention to cleanness of lenses as their contamination deteriorates quality of film image.

The objective and viewfinder can be wiped on the outside only with a clean cambric or linen napkin, on breathing on glasses.

Protect the camera against shocks and jerks, in order to avoid damage of precise mechanical and electronic systems.

Never disassemble the camera.

Only skilled experts of repair shops can allow curing troubles, if any, in your camera.

For long-term storage, the shutter should not be cocked. Take power source cells out of their container, also.

Move the guard curtains key to a position at which the curtains shut the objective and viewfinder.

Never wipe non-metal parts of your camera with alcohol, acetone, petrol and other active solvents.

Protect the camera against humid and dust.

10. ACCEPTANCE CERTIFICATE

Camera LC-A serial No. _____ complies with requirements of technical documentation and is found fit for use.

Output date _____ 19 _____

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