

MINOX C Owner's Manual

Before you start reading the Manual, please fold out this, and the last page, so that you can see at a glance which particular dial, window or other part of your MINOX C is being mentioned in the text.



MINOX CORPORATION

25-20 Brooklyn Queens Expressway West, Woodside, New York 11377



432 a Specifications Subjects to Change Without Notice - Printed in Germany XII/73

Technical Information

Minox C Ultra Miniature Camera

Minox C Models:

171-017 Minox C, chrome finish

171-018 Minox C "Private Eye" - black finish

Negative size: 8 x 11 mm

Film: Minox films in daylight loading 15-exposure or 36-exposure cartridges.

Film advance: By telescopic (push-pull) rapid wind, coupled with shutter cocking. Film advance operates only after shutter has been released.

Film pressure plate: 750 grams pressure. Film gate opens during film advance and when camera back is opened.

Shutter: Electronic sliding double-blade shutter with two electro magnets, four transistors and two diodes. Automatic exposure range: 1/1000 sec. to approx. 10 seconds.

Manual exposure range: 1/1000 sec. to 1/15 sec.

Battery: One Mallory 7X 27 or Varta 7150 (5.6 Volt) battery for exposure automation, electronic shutter slow-speed signal light.

Exposure automation: Cadmium sulfide (CdS) photo resistor cell controls the electronic shutter during exposure. Slow-speed signal for exposure longer than 1/30 sec. Filter factors are automatically compensated. Film speed range: ASA 8 to ASA 400.

Lens: 15 mm f/3.5, 4-element objective; coated; always at fully-opened aperture. Focusing range: 8 inches to infinity (∞).

Filters: UV filter used as lens window. Built-in neutral density (gray) filter, movable. Other filters available as slip-on filters.

Sun shade: Built-in.

Viewfinder: Luminous frame finder with automatic parallax compensation.

Exposure counter: Counts down from 36 to 0. Distinctive, dark scale from 15 to 0 for short films.

Flash contact: Standard PC type.

Flash synchronization: X for all speeds up to 1/250 sec. with electronic flash units; up to 1/30 sec. with flash bulbs and cubes.

Length (closed): 4 1/4"

Length (open): 5 1/4"

Width: 1 1/4"

Height: 1/2"

Weight: Camera only, 3 1/2 oz.

Camera with battery and film, 4 oz.

Service: The Minox C is guaranteed to the original registered owner as shown on the guarantee card supplied with each new camera.

If it should be necessary to send your Minox for adjustment or repair, wrap it carefully and mail it, together with your guarantee card and a note explaining the trouble encountered, to:

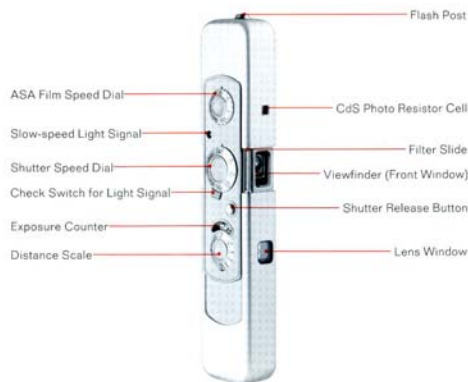
Minox USA, Service Department,
Post Office Box 1060,
Woodside, New York 11377

Snaplock for Back Cover Film Compartments Sliding Back Cover



Toothed Film Transport Wheel Serial Number Viewfinder Eyepiece Battery

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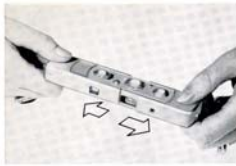
Developing and enlarging

Minox daylight developing tank: You don't need a darkroom to develop your black-and-white films! And it's easy to do. See illustration, next to enlarger base.

Minox enlarger: Designed specifically for needle-sharp enlarging of Minox negatives; lamphouse travels on rock-steady column for enlargements up to 10 1/2" x 13 1/2" on base-board.

Other developing aids: Minox ultra-fine grain developer; Minox negative viewer/magnifier; Minox negative wallets.

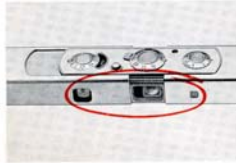
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Opening the camera

For picture-taking – or simply viewing the scene – pull the Minox C open as far as it will go.

When the camera is closed, the shutter release is locked, and the viewfinder and lens are protected within the camera housing.



The three "eyes" of the Minox C

The front of the Minox C contains (left to right in the illustration) the lens window, viewfinder and electric eye. All three must be unobstructed (watch your fingers!) when you take a picture. Sharpness and brilliance of your pictures depends to an important degree on a spotlessly clean lens window.

If the electric eye is covered, the exposure will be incorrect.

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Picture-taking accessories

Thanks to its tiny size, high precision and unique features, your Minox C lends itself easily to a very wide range of picture possibilities. Ask your Minox dealer for the Minox folder showing all accessories. Here are just a few:

Minox camera clamp: Attaches your Minox C firmly to any tripod.

Minox pocket tripod: Barely larger than a pencil, the Minox tripod opens up into a rock-steady three-legged stand with adjustable swivel head. It even contains a cable release to fit the camera clamp for smooth release of the Minox shutter.

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Telescopic rapid wind

After you have taken a picture, 'close' the camera – all the way. Then, for the next picture, you pull it open again – all the way. With this "push-pull", the film is advanced for the next picture, the shutter re-cocked and the exposure counter moved to the next number – all automatically!



Circle in lens window indicates that the Minox is ready for the next picture

This automatic cycle occurs only if, before closing the camera, you actually took a picture or otherwise released the shutter. – The small circle in the lens window tells you that the shutter is wound, ready for the next picture; it disappears after you have released the shutter: Your signal that you must "push-pull" before taking the next picture.

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Conratulations!

With your new ultra-miniature Minox C camera – a tiny marvel of modern electronics – you can enjoy the pleasures and excitement of picture-taking with greater ease than you may ever have imagined. It's so small, so light, you can take it along wherever you go, as matter-of-factly as your pen or set of keys, nesting in your pocket or purse.

The Minox C electronic shutter times every exposure automatically – whether it's a time-splitting 1/1000 or 10 seconds – while you simply aim the camera through the crystal-clear luminous frame viewfinder.

What's more, your Minox C lets you take close-ups as readily as other pictures. Its needle-

sharp lens can be focused as close as 8 inches and there is even a special Minox film for copying of documents, books or drawings.

For the best possible results right from the start, please take the time to read the simple instructions on the following pages thoroughly.

And, before making any important pictures – of a trip or some special event – shoot a cartridge of film outdoors, and with flash indoors. This will give you practice in camera operation and provide a check on your outfit.

But NOW – why not get acquainted with the pleasure and ease of Minox picture-taking?

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Minox right angle finder mirror: Snaps over the viewfinder eyepiece of your Minox C to let you take candid snapshots "around the corner" to the left or right.

Minox binocular attachment: Clamps your Minox C to one eyepiece of your binoculars while you aim through the other eyepiece for close-ups of distant subjects (wildlife, scenery, etc.).

Minox folding copy stand (not shown): Your Minox C can take close-ups down to 8 inches with a mere turn of the focusing dial. The 4-legged copy stand, adjustable from 8 to 18 inches high, facilitates copying of books, documents, drawings, maps. Folds to 1 x 1/2 x 9" for easy briefcase carrying.



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S-t-e-a-d-y!

Hold your Minox firmly, yet relaxed, with both hands. Keep your thumbs on the underside of the camera, other fingers on top, so that the three windows are unobstructed.

Your Minox C can, of course, remain in its ever-ready case for picture-taking. Simply fold the hinged section of the case all the way up against the underside. (page 18)



Taking the picture

When you have framed your picture in the luminous rectangle of the viewfinder, hold the camera steady and squeeze the shutter release button gently. Take the camera from your eye only after you have heard the soft clicking of the shutter.

The shutter release requires only light pressure. A steady camera hold and gentle release are the best assurance for good pictures. If the camera moves while you are taking a picture, the results will be blurred.



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Minox Accessories

Minox films

Minox films in 36-exposure drop-in cassettes for every kind of picture-taking are available from your Minox dealer: Minicolor (also in 15-exposure cassettes) for color prints; Minochrome for color slides; Minox ASA 25 for needle-sharp sparkling black-and-white prints – and others for special purposes. Your Minox dealer will be glad to suggest the proper film for your specific purposes.

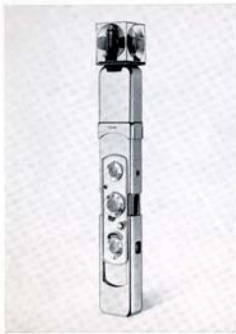
35 mm f/2.7 Minogon lens and a 24 V 150 W halogen bulb with an efficient double condenser system for superb projection quality. The compact Minotact projector (not shown) requires a mere push-pull of a grip handle to change from slide to slide.

Minox projectors

Enjoy brilliant large-screen projection of your fine Minox color slides. The HP 24 Remote Control projector lets you sit with your audience while you change slides and focus sharply by remote control. Just load up with a 36-slide magazine – that's all.



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Flash pictures

The flash contact of the Minox C is of the standard PC type, and you may use almost any kind of flash unit with your Minox C. Just remember to set the shutter speed dial correctly:
 For flash bulbs or cubes - to 1/30 sec or slower;
 For electronic flash - to 1/250 sec or slower.
 Ask your dealer for one of the highly efficient, compact Minox flash units; their styling matches the camera and they fit snugly onto your Minox C; they connect automatically.
 If you already own a B/C flash unit, Cube Flasher or ME-1 Electronic Flash for the Minox B, you can also use it with the Minox C.

Minox Cube Flasher C 4

This extremely small 1 1/2 oz flash unit plugs right into your Minox C and uses convenient 4-shot flash cubes. Complete instructions are supplied with the unit.

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Automatic exposure

With the shutter speed dial set to "A" (Automatic), your Minox C automatically computes the exposure and simultaneously times the shutter within a stepless speed range from 1/1000 sec to about 10 seconds.

Modification of automatic exposure

The Minox C offers you the advantage of adjustability for longer or shorter automatic exposures, by a simple change of the ASA dial setting, to adapt to exceptional circumstances. (see below).

Unusual exposure situations

While the Minox C exposure automation is programmed to produce correctly exposed pictures in the large majority of photographic situations, there may be unusual occasions when you have to influence the electronic "brain" to give you the results which YOU want. Here are examples:

AGAINST-THE-LIGHT SHOTS

In such situations, the light may shine directly into the electric eye and, therefore, produce a shorter exposure than desirable for the main portion of the subject. - You can usually cor-

rect this by turning the ASA dial for such a shot three 'dots' lower (e.g. from ASA 50 to ASA 25).

VERY LIGHT BACKGROUND

You may want to picture, from a distance, a skier surrounded by a large area of sunlit snow, or a small figure against brilliantly white clouds. - Use the same technique as for against-the-light shots.

VERY DARK BACKGROUND

This is the opposite situation, where a small light subject (e.g. girl in a white dress) appears against a large dark background. For such a shot, simply turn the ASA dial three 'dots' higher (e.g. from ASA 50 to ASA 100).

After taking a picture with 'corrected' setting, ALWAYS return the ASA dial to the actual ASA number of the film!

Very bright scenes.

Gray (neutral density) filter.

For very bright scenes (beach in brilliant sun, glaciers, snow in high mountain areas, etc) or for faster films (ASA 50 or more), even 1/1000 sec may produce over-exposed pictures. Under such conditions, simply push the ridged filter slide above the viewfinder all the way toward the lens window (see page 9).

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Eveready case

Before inserting the camera, turn the locking disk on the outside of the case to vertical position. With the lens window to the front and dial side up, slide the camera into the case and, using the external ring in the manner of a screwdriver, turn the locking disk one-quarter turn to the right while holding the camera firmly against the inside of the lock. With the camera locked in, the slot of the locking disk is in horizontal position.

To unlock the camera, turn the locking disk one-quarter turn to the left.

The flat spring clip of the chain snaps into the D-ring of the locking disk.

Attach the fastening ring of the measuring chain to a button, belt loop or buttonhole to protect your Minox C against loss.

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Automatic Exposure switched off; shutter speed dial set at 1/30 sec.

Manual exposure setting

To take pictures without automatic exposure, you can set your Minox C manually for shutter speeds from 1/15 sec to 1/1000 sec: Simply turn the shutter speed dial to the desired speed. The engraved figures are fractions of a second (30 = 1/30 sec). Be sure to return the shutter speed dial to "A" when you want to use automatic exposure.

Manual speed settings are important for taking flash pictures. For flashing with AG-1 B flashbulbs or flash cubes, use 1/30 or 1/15 sec; for electronic flash units, 1/250 or slower. More about flash on page 20.

With manual settings, the shutter speed is still accurately timed by the electronic shutter; only the CdS cell is switched off.

While exposure automation is stepless (exposure may be 1/200 sec, for instance), manual settings are possible only for the exact, engraved, shutter speeds; intermediate values cannot be set. If the dial should accidentally be set between engraved values, the shutter will operate at the nearest adjacent speed.

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Set the film speed

Turn the ASA dial to the speed (ASA number) of the film which you are using. The ASA number is shown on every Minox film package or on the film instruction sheet.

Inadvertent setting of too high an ASA number results in underexposure; too low, in overexposure. However, you may use the ASA dial to obtain intentionally longer or shorter exposures than would result from normal exposure automation. (page 6)



ASA film speed dial - set for ASA 25 film

ASA dial settings

The ASA dial of your MINOX C shows the values listed below in bold type; the intermediate values are indicated by dots on the dial.

6	12	25	50	100	200
8	16	32	64	125	250
10	20	40	80	160	320
12	25	50	100	200	400

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Care of the Minox C

Lens window: When reloading, check the lens for smudges or fingerprints and, if necessary, clean carefully.

Housing: Clean the outside of the camera housing occasionally with a soft rubber eraser - no liquids!

Film compartments: When reloading, blow out the empty film compartments; dust particles may scratch the film.

Should salt water ever get into the camera, it can corrode the mechanism. You may perhaps save the camera with this radical treatment: Open the camera and camera back and place in warm tap water; let it cool; remove, shake out water; dry the camera at once near a heater and rush it to our Service Department with the notation: Salt Water Damage.

Hot weather precautions
 All films are sensitive to high temperatures before and after exposure. Do not store your Minox films or your loaded Minox C in the glove compartment or on the rear window shelf of your car, nor in other places where the film or battery may be affected by excessive heat.



Clean lens window with cotton swab - or with a clean linen cloth wrapped around a match or wood stick.

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The ND filter increases the required exposure by about 4 to 6 times. A possible 1/4000 sec - which is beyond the Minox speed range - thus becomes approximately 1/800 to 1/1000 sec; the shutter automation compensates for this factor, and requires no further adjustment.



Long exposures - Slow-speed signal

Exposures of longer than 1/30 sec call for a tripod or other firm support, or the use of flash. Under doubtful or unfavorable light conditions, you can easily determine before you take the picture if the necessary exposure will be longer than 1/30 sec: With the shutter in "ready" condition (small circle visible in the lens window) and with the shutter speed dial set to "A" (Automatic), point the camera, at waist level, toward the subject and push the ribbed check switch at the shutter speed dial all the way toward the back of the camera. If the slow-speed signal lights up, the exposure will be longer than 1/30 sec.

You can check the signal light with the camera open or closed, when in "ready" condition. To avoid unnecessary battery drain, switch on the slow-speed signal light only briefly. For best results under unfavorable light conditions, use a Minox tripod (page 22) or place the camera on any available firm support. In a pinch try holding your Minox steady by leaning your elbows on a table or other firm support, or against a wall. For indoor pictures, it is best to use flash (page 20).

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advance lock) when you press the shutter button. Disregard it and rely on the above visual test.

Battery replacement

Open the camera, as for film-loading (see page 14); pull up on the flexible strip of the battery chamber and remove battery. Check and, if necessary, clean the battery contacts in the chamber. Clean the new Mallory PX-27 or Varta 7150 battery (see below) and insert it so that the + and - poles are in the position indicated on the flexible strip. Make the battery test described above before you insert a film cartridge.



To remove battery, pull up on flexible strip.

Battery cleaning

Clean the contacts at both ends of the battery with a rough dry cloth. Occasionally clean the battery contacts in the battery chamber of the camera in the same manner to assure good connection.

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Battery

The Mallory PX-27 or Varta 7150 battery supplied with the Minox C powers the exposure automation, shutter and slow-speed signal light. With normal use, it will last for about a year. To insure continuous functioning of the camera, make it a practice to test and clean the battery from time to time.

Always remove the battery before you store your Minox C for an extended period.

Battery test

Before you insert a film cartridge, test the battery condition: Set the shutter speed dial at 1/1000 and press the shutter release button. 'Push-pull' the camera and release again. After each release, the shutter blade without the circle must appear in the lens window. If the circle remains visible, or if the shutter stays open, remove and replace the battery immediately.

Even though the shutter does not operate with a weak or exhausted battery, you will hear a soft 'click' (the mechanical release of the film

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Filters

You already know about the gray ND (neutral density) filter after reading page 6.

Without having to think about it, you are using another filter with every exposure in your Minox C: The lens window is a UV (ultra-violet) filter which requires no exposure correction.

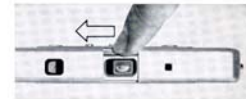
In addition, the following slip-on filters are available in a complete set with filter case. The exposure automation of the Minox C automatically adjusts for correct exposure with these filters.

Minox Skylight Filter (R 3): Eliminates bluish cast in color slides under noonday sky.

Minox Color Correction Filter R 6: Eliminates bluish cast under blue sky in the shade.

Minox Green Filter: For black-and-white outdoor pictures. Brings out clouds, lightens greens.

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Sliding gray ND filter into position



Minox slip-on filter



Snapshot setting; range of sharpness from 6 ft to Infinity ∞

Distance setting

The distance scale is calibrated from infinity (∞) to 8 inches. To set, rotate the dial until the desired distance is at the black dot in the middle of the small bracket. The bracket indicates the range of sharpness at each setting. Examples: With the scale set at the red dot (12 ft.) you have a universal snapshot setting with sharpness from infinity (∞) to 6 ft.

For landscapes with no important foreground closer than 12 ft., use the infinity (∞) setting. The following "standard" settings are also useful: With scale set at 6 ft., you get sharpness from 4 ft. to 11 1/2 ft. - With scale set midway between 3 ft. and 6 ft., sharpness extends from 3-6 ft., fine for medium close-ups of people. For subjects closer than 2 feet, always use the measuring chain (see following page).

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The exposure counter now stands at '36' or '15' depending on the original film loading setting.

Set the ASA dial for the correct film speed.

On very rare occasions the film cartridge may not drop flush into the camera so that the back cover cannot be closed. (This is not your fault nor a defect.) It may occur if the take-up core of the film cartridge happens to rest exactly on the teeth of the transport wheel in the film compartment of the camera. Remedy: Lift out the film cartridge and, with your fingertip, turn the triple-tooth transport wheel in the camera film compartment slightly further clockwise; then re-insert the film and close the camera back cover.

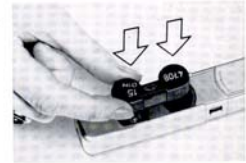
Un-loading

Watch the exposure counter!

When the pointer is at the end of the dark field - between '2' and 0 - you have reached the final exposure on the film.

After the final exposure, "push-pull" and release the shutter twice - NO MORE. (The exposure counter then stands at the red dot between 0 and 36.)

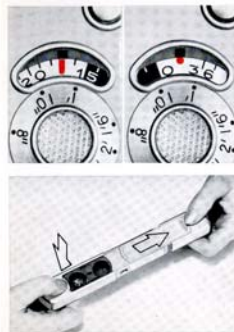
15



Open the camera back. With slight tapping of the camera, the cartridge will drop into your hand; or it may be lifted out by its bridge.

As the exposure counter now stands at the (red dot) loading position for 36-exposure cartridges, you can insert a fresh 36-exposure film without further adjustments. If the next film is in a 15-exposure cartridge, set the exposure counter to the red line between 20 and 15 before inserting the film.

Place the exposed cartridge in a film box or wrap it in dark paper until it is developed.



Loading with film

Always load - or unload - the Minox in subdued light, or in the shade; if there is no other shade, turn your back towards the sun.

Set counter to "loading" position: While holding down the shutter release button, "push-pull" the camera until the exposure counter is set for loading position.

For 36-exposure cartridges: set to red dot between 0 and 36. (illustration at near left).

For 15-exposure cartridges: set to red line between 20 and 15. (illustration at far left).

Open camera back: Pull camera 'out'. Press down on crescent-shaped snaplock on underside of camera and slide open the back cover all the way until both film compartments are free. (illustration below).

Insert cartridge: Drop the cartridge into film compartments and close the back cover until it snaps shut. Hold down the shutter release button while you "push-pull" twice.

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Extreme close-ups - Measuring Chain

At distances of 2 feet or less, the range of sharpness becomes small; close distances must be set carefully on the distance scale. Use your Minox camera chain for measuring: With the chain in the camera socket held taut and at right angles from camera to subject, the chain beads indicate distances of 8, 10, 12 and 18 inches; the full length chain measures 24 inches.

After measuring, set the distance on the distance dial of camera. To take the picture, hold the chain at the appropriate bead and extend it once more to the subject to re-establish the correct distance; then S-T-A-Y at that distance, lower the chain and release the shutter.

When using a measuring tape or rule instead of the chain, measure the distance from the front of the camera.

For occasions when you may want to use your Minox C camera without the eveready case, your dealer can supply a safety/measuring chain which looks directly into the corresponding socket of your camera.

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Viewfinder

The bright luminous frame within the viewfinder shows you the exact picture area that will appear on your film.

The viewfinder image is automatically corrected, at all distances, to be identical with the film image (Parallax Compensation). At extremely close distance (8-10 in.), the film image is slightly smaller than the viewfinder image - by about one frame-line width on all sides within the luminous rectangle.

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Exposure counter

The numbers and scale lines of the Minox C exposure counter indicate how many more exposures you can still make on the film. Before you insert a new film cartridge, the counter must be set to a definite loading position. (see next page).

All Minox films are available in 36-exposure cartridges, some also in 15-exposure cartridges. 15-exposure cartridges are used only within the dark counter scale with white numerals.

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