MINOX 35 GL

Owner's manual

The pocketable miniature

Minox has always been famous for fine ultraminiature cameras. In 1974 the Minox 35 EL arrived as the first 24 x 36 mm Minox camera – the smallest on the world market, and with automatic exposure control.

The Minox 35 GL you have now bought is the successor of the immensely successful Minox 35 EL. It looks very like the previous model: most of the changes are internal. The Minox 35 GL has a backlight switch to double the automatic exposure for certain subjects. On its film speed scale you can set all speeds from 25 to 800 ASA or 15 to 30 DIN, including intermediate values. And there are innumerable small improvements for more reliable failure-free operation, for instance simpler film loading.

You can use your Minox 35 GL with a wide range of films: it takes any standard 35 mm cartridge for 36, 24, 20 or 12 exposures.

Before loading a film do however get to know your camera really thoroughly. This detailed instruction manual will help you to make the most of the Minox 35 GL. If you are less interested in the technicalities, read only the main paragraphs printed in bold.

We hope you will get much fun and many good pictures with your Minox 35 GL.

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The battery

The shutter and speed indication can only operate with a battery. The correct type is a 5.6 volt mercury cell (Varta 4027, Ucar EPX 27 or Mallory PX 27). The battery should be fresh and must be fitted the correct way round.

Fitting the battery

Open the front cover and unscrew the battery compartment cover – with a coin if necessary.

Clean both battery contacts with a rough cloth (e.g. your jacket sleeve), then push the battery with the – end first into the compartment so that the + end faces outwards. The inside of the screw cap also carries a + sign.

Fully screw the cap in again.

A click when you press the release does not necessarily signify correct shutter operation. So test the battery.

Battery test

Fully open the front cover, fully advance the film (page 12) and switch off the backlight switch (page 19).

Now fully depress the battery test button – the small rectangular key between the flash shoe and the orange release button. With the test button fully depressed, the needle along the right-hand finder frame edge should swing up to the centre (1/125) or beyond.

Note: If the needle was already above 1/30, it first drops down when you touch the test button, and then swings up again for the battery test indication as you fully depress the test button.

If the needle does not reach the "125" mark the battery is exhausted. If the needle doesn't move at all you may have inserted the battery back to front.

The battery test cannot tell you how much longer the battery will last. Preferably replace the battery about once a year, even if the battery test is still OK.

Apparent early battery failure may in fact be a poor contact. Remove the battery, rub down the contacts firmly and replace.

Remove a battery from the camera as soon as it is spent or too old. Also remove the battery, even if fresh, when you are unlikely to use the camera for a prolonged period.

Opening and closing the camera

To get ready to shoot, pull the front cover open and fully down. After picture taking, flip the cover up again against the camera body.

Opening the front cover automatically extends the lens, closing the cover retracts it. So there is no lens cap liable to go astray.

The closed cover also covers the finder, blocks the release and switches off all electric circuits.

Even with the camera closed you can still advance (page 22) or rewind (page 25) the film.

You can close the cover irrespective of the position of the distance setting ring.

The viewfinder

The bright frame in the finder shows the field of view.

At the right-hand edge of the finder you can see the shutter speed scale and meter needle (page 18).

The closed front cover also blocks the finder window. So when you see nothing through the viewfinder, you know you must open the cover.

Hold it right

The illustration left shows the right camera hold for horizontal shots, the illustration opposite a suitable hold for upright views.

Hold your 35 GL steady while you release. That reduces the risk of camera shake.

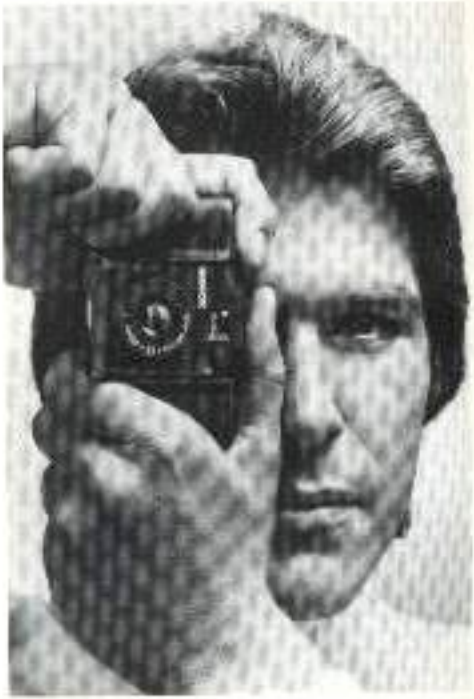
Keep your fingers clear of the lens's view and of the CdS cells. Preferably press your fingers flat against the front of the camera body.

Releasing

Once you see the view you want in the bright frame of the finder, gently press down the orange release button: the shutter opens to take the picture.

After an exposure the release remains depressed and only comes up again when you start advancing the film. That also tells you that you don't have to let go of the button as soon as you have taken the picture – in fact keep depressing it until you are sure the exposure is finished.

Once you get used to that you can also tell from the position of the button whether you have advanced the film or not.



Advancing the film

Pull the film transport lever – at the top right of the camera back – fully out to the right and forward. Repeat this once more.

If you've failed to pull the lever fully forward either time, pull once more.

When you have a film loaded and it is advancing correctly you also see the round knob with the rewind crank (at the top left of the camera) rotating as you operate the film winding lever.

So don't stop this knob from moving as you wind.

The light dot on the crank helps to show up this movement.

When you have exposed the whole film, the winding lever no longer moves out fully and the release is blocked.

You can advance the film when the front cover is either open or closed.

The frame counter

The frame counter (the white window at the extreme left of the camera top) tells you how many pictures you have taken on the film.

Provided that you have not advanced the film (even partly) after the last exposure, the frame counter returns to the start when you remove the camera back to change the film (see also page 25).

Setting the film speed

Every film package carries a speed rating in ASA and/or DIN.

You must set this speed figure on the camera to ensure that the automatic control of the 35 GL correctly exposes your film.

Set this speed on the dial in the camera base. The dial engages at

every ASA/DIN figure. The unmarked dots between the arrowheads are appropriate intermediate values, for instance 64 and 80 ASA between 50 and 100 ASA (or 19 and 20 DIN between 18 and 21 DIN). ASA values are marked in red, DIN in green.

You can turn the dial all round, there is no mechanical stop.

If you have set the film speed too high, your shots will be underexposed; if the speed is set too low, you get overexposed pictures.

Automatic exposure control

Your Minox 35 GL has an electronically controlled shutter that automatically selects the exposure time for any preset aperture (aperture priority system). An auxiliary CdS exposure meter shows this shutter speed in the finder. With this modern system you can shoot rapid sequences without resetting the exposure. You can equally select the ideal aper-

ture for a given depth of field or the best shutter speed (in the finder) for action.

You can equally use a simple snapshot setting for bright light: Set the aperture ring (the rear milled ring of the lens barrel) to f/5.6 and leave everything else – apart from the distance setting (page 20) – to the automatic control. This is fine for quick and convenient shooting, though it does not make full use of the scope of your Minox 35 GL.

The lens aperture

You can set any lens aperture (f-stop) from f/2.8 to f/16 on the aperture ring on the lens barrel.

A high f-number (for instance 11 or 16) signifies a small aperture; a low f-number (2.8 or 4) a large opening. The higher the f-number, the greater the depth of field (i.e. the deeper the sharp subject zone) but the longer the exposure time required.

Automatic electronic speeds

The electronic shutter of the Minox 35 GL automatically controls the exposure time to allow for the subject brightness, film speed setting and preselected aperture.

The automatic range of the 35 GL extends from 1/500 second to at least 1 second at 800 ASA or 30 DIN. In the Minox 35 GL the film speed is one factor controlling the automatic shutter speed circuit; hence the automatic control range is greatly extended with slower films.

Thus with 25 ASA or 15 DIN film you get automatically correct exposures from 1/500 second to about 30 seconds.

With medium film speeds you get for instance:
1/500 to 8 seconds at 100 ASA
1/500 to 16 seconds at 50 ASA

You cannot disengage the automatic exposure control of the Minox 35 GL.

The shutter speed indication

The electronic shutter establishes the exposure time *during the exposure itself* according to the *prevailing light conditions.*

But the Minox 35 GL has an additional CdS exposure meter to show you before the exposure the likely exposure time at the selected aperture and subject brightness.

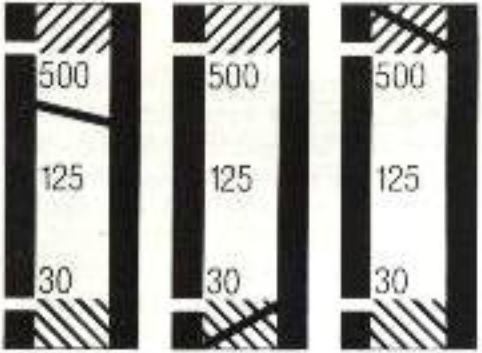
The meter of the shutter speed indication is switched on when:

- you open the front cover, and
- you have advanced the film.

The needle thus only shows the shutter speed when the camera is ready to shoot. After an exposure the meter is automatically switched off to save battery life.

The meter needle appears as a dark line across the right hand bright frame as you look through the finder. It indicates the approximate time – between 1/500 and 1/30 second – that the camera would expose *at that moment* with the selected film speed, aperture and prevailing subject brightness. However, you can also use the shutter speed indication to adjust the aperture setting – and hence automatically the exposure time – before shooting, for instance for a faster speed with a sports subject. Look through the finder and watch how turning the aperture ring on the lens barrel also alters the exposure time.

You can estimate intermediate values – for instance 1/250 second halfway between 1/500 and 1/125; or 1/60 between 1/125 and 1/30.



Left: Exposure time approx. 1/300 second

Centre: Slow speed warning (needle in shaded area below 1/30 second)

Right: Overexposure warning (pointer in shaded area above 1/500 second)

The slow speed warning

When the exposure meter needle drops into the shaded area below 1/30 second, the exposure time at the selected aperture will be longer than 1/30 second (e.g. 1/20, 1/5 or even 3 seconds). With hand-held shots you then risk camera shake. The needle simply reminds you to select a larger aperture. If the light is too poor for that, either use flash (page 26, 31) or expose for longer with a tripod.

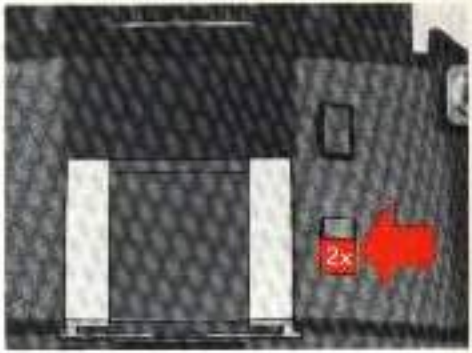
The overexposure warning

If the needle moves into the shaded area above 1/500 you risk overexposure even at 1/500 second. Here select a smaller aperture to bring the shutter speed back to 1/500 second or slower.

The backlight switch

If you push the backlight switch (the small rectangular button to the right of the flash shoe) fully forward, exposure times are automatically doubled (for instance 1/250 instead of 1/500 second).

A red window with "2x" in white reminds you that you have switched on the backlight switch.



Backlight switch on

The shutter speed indication in the finder shows the increased real exposure time.

Use the backlight switch not just for backlit subjects (to lighten important deep shadows) but also for outdoor views where a bright sky covers a large part of the picture and would thus lead to an excessively short exposure.

For example, if you turn the distance scale so that 20 feet is opposite the arrowhead, your depth of field at f/8 extends from 10 feet to infinity (see illustration).

The smaller the selected aperture (higher f-number) the greater the depth of field at a given distance.

The nearer the subject distance, the smaller the depth of field at a given aperture.

The depth of field scale of the 35 GL is based on a circle of confusion of 0.0011 inch (0.028 mm) – a somewhat stricter criterion than is usual in miniature photography (normal COC is 0.0013 inch or 0.033 mm). If you only want comparatively small prints (say up to 3½ x 5 inches or 9 x 13 cm) you can allow a more generous standard for depth of field by reading the depth for the next smaller f-number than you have actually set. For instance you can set f/8 as the working aperture but read the sharp zone for f/11 on the distance scale. But keep to the indicated actual depth zones for your set aperture if you take colour transparencies or want big enlargements.

Distance and depth of field

You can focus the Minox 35 GL on any distance between 3 feet and infinity (∞): turn the front ring to bring the appropriate distance opposite the orange arrowhead.

Subjects are sharpest at the focused distance but still adequately sharp (for normal enlargements) over an extended distance range. This zone of sharpness is known as the depth of field.

A depth of field ring behind the distance scale indicates the available sharp zone. This always extends from the left hand mark of a given aperture to the right hand mark of the same aperture.

Dots mark the index positions for f/8 (between 11 and 5.6) and f/4 (between 5.6 and the arrowhead).

Snapshot setting from 10 feet to infinity at f/8.

Loading the film

a

Always load the camera in subdued light – outdoors at least in the shade of your body.

Turn the back cover locking lever to uncover the red dot, then pull off the back from underneath (illustration a).

Insert the film cartridge in the film chamber to the left of the film track, with the film leader pointing to the right.

Open the camera's front cover to be able to operate the release button. Work the film transport (releasing in-between if necessary) to bring the broad slot of the take-up spool to the top. Then press the rewind

release button (at the right in the camera base) to lock the take-up spool. Push the film leader as far as possible underneath the metal sleeve (illustration b), then let go of the rewind release button.

Alternately advance the film and relase until

- the full film width with both perforation rows is drawn across the film track and lies flat against it (arrow in illustration c); and
- one sprocket of the sprocket wheel at the bottom right of the film gate (circled in illustration c) engages a perforation hole of the film.

d

Refit the camera back, push fully home and lock by turning the back lock in the camera base to cover the red dot again (illustration d).

Advance the film, release the shutter, advance once more. Check also that the rewind crank in the camera top (at the left) rotates – watch the light dot.

The frame counter is now at zero. Set the film speed on the scale in the camera base (page 13).

You can check during shooting whether the film advances correctly: whenever you advance the film the rewind crank with the light dot must rotate as well.

Flash shots

The hot shoe of the Minox 35 GL takes any electronic flash unit **(no cube or bulb flash units)** with hot shoe contact – not just the special Minox FC 35 computer flash (page 31). The latter however particularly matches the Minox 35 GL and EL in size, shape and operation.

Push the black cover plate backwards out of the hot shoe. Push the foot of the flash unit fully into the camera shoe so that the flash foot pushes in the changeover switch in the front.

This disengages the automatic exposure control of the Minox 35 GL and sets a fixed flash synchronising speed of 1/125 second.

The foot of the flash unit must remain firmly in the hot shoe, *keeping the switch depressed.* Otherwise the automatic exposure control continues to function as for daylight. After a flash shot that means that the shutter release remains open and can cause lamps and other light sources to record as long blurred lines on the film.

With some electronic flash units – though not the Minox FC 35 – you have to operate the film transport of the 35 GL immediately after a flash shot. For these flash units do not indicate readiness to fire if the shutter is not tensioned or – more rarely – may fire on their own once they have recycled. (This is not a fault but has to do with the flash unit's circuit.)

Unloading

After the last exposure (No. 36, 24, 20 or 12 on the frame counter, depending on the film) you have to rewind the film into its cartridge:

Unfold the rewind crank end with the light dot (in the camera top at the left), depress the rewind release button (in the recess at the right of the camera base) and let go. Rotate the rewind crank clockwise to rewind the film.

When the crank suddenly turns more freely the film is rewound.

Remove the camera back and take out the cartridge from the camera.

If the frame counter does not return to its start position on removing the back, release the shutter once.

More about automatic exposure control

Many amateure would like both great depth of field and use a really fast shutter speed in their shots. This however is possible only in very good light and with the faster film types – despite the exceptional depth of field of the Minox 35 GL. On most other occasions you can achieve fast shutter speeds only at the expense of a large aperture (set a lower f-number) and hence of reducing the depth of field zone. Conversely, if you increase the depth of field by stopping down (higher f-number) you automatically get a longer exposure time. So you have to decide whether you want:

- the fastest possible shutter speed
- maximum depth of field or
- a compromise between the two

Even with its automatic exposure control the Minox 35 GL provides a lot of choice.

The simplest compromise is the f/5.6 rule: Set the aperture to f/5.6. In good daylight that usually gives you a short enough exposure time (as shown in the finder) for a shake-free hand-held shot. F/5.6 provides average depth of field as shown on the depth indicator on the distance scale.

In poorer light (shutter speed needle at 1/30 second or in the slow

speed warning field) open the aperture to f/4 or f/2.8. This reduces the exposure time but also the depth of field.

For high speed action (sports etc.) you need the fastest possible shutter speed to avoid movement blur. For such pictures set the largest aperture (f/2.8) and check in the finder that the shutter speed is within the range of the electronic shutter. Stop down only if the meter needle goes into the warning area above 1/500 second – and then stop down only until the needle returns to 1/500 second. You can use intermediate aperture values.

Where you need maximum depth of field, turn the focusing ring on the lens barrel so that the distance scale shows the required sharp zone across two matching aperture index lines – for instance f/8 or f/11. Then set the aperture to this value.

The finder then shows you the shutter speed automatically set by the camera under these conditions.

Care of the camera

Periodically clean the front lens element, the outer surfaces of the finder windows and the curved window in front of the two CdS cells. Remove any dust with a soft brush, air blower or special lens cleaning tissues – these are optainable from photo dealers. Do not use lens cleaning fluids.

Immediately remove any fingerprint from the front lens; such prints greatly reduce definition.

When changing films avoid getting dust on to the rear lens or into the camera interior.

Accessories

Push-on filters and collapsible lens hood

Every push-on filter for the Minox 35 GL and EL is combined with a collapsible lens hood and supplied in a small flat leather case. Remove the filter before closing the camera front.

The skylight filter

This reduces any blue cast liable to arise in colour transparencies taken by bright blue skylight, especially in the shade. The filter also absorbs all ultraviolet radiation which could impair definition with all films.

The 4x neutral density filter

You need this filter for ultra-speed films (400 ASA or higher) in bright daylight as there even 1/500 second at f/16 could yield overexposure. So whenever the meter needle goes beyond 500 into the overexposure area even at f/16, fit the ND filter.

The Minox FC 35 computer flash

The flat and compact Minox FC 35 electronic flash exactly matches the flat and compact Minox 35 GL/EL. In size, design and operation it is specifically designed for these cameras. The flash unit measures 3 x 2.2 x 1.2 inches (7.5 x 5.5 x 3.0 cm) and weighs 4.6 ounces (130 grams).

It is a computer flash with two operating ranges (alternative aperture settings). With the "green" setting you cover subjects up to 15 feet or 4.5 m away. At the "red" setting the range only goes to 10½ feet (3.2 m) but you get more depth of field as you use one stop smaller at any film speed setting than at the "green" setting.

You can switch off the computer control of the FC 35 to shoot at even greater distances with high-speed film, for instance up to about 42 feet or 13 m with 400 ASA. The 100 ASA guide number is 58 (feet) or 18 (m). The flash recycles in 10 seconds and uses two size AAA alkaline batteries which last for 60-80 flashes. The flash duration ranges from 1/500 to about 1/30,000 second.

The ever-ready case

The black leather ever-ready case of the Minox 35 GL is closely tailored to the camera so that it is no bigger than a zip pouch. But you can shoot much faster with it.

An eyelet at the left and right of the ever-ready case takes the wrist strap supplied for optimum comfort with either hand. The 38 inch (96 cm) neck strap – this is an extra accessory – fits into both eyelets for carrying the camera round your neck.

You can remove the top of the ever-ready case altogether. For instance you can go out ready to shoot with the Minox 35 GL in the bottom section of the ever-ready case and slung around your neck, with the camera front open and the filter and lens hood mounted (see illustration on page 30).

The belt and wrist pouch

This smart elegant case is luxury leatherwork in top quality soft burgundy red Naskapi leather. It is totally unlike the familiar ever-ready case. It ideally matches smart sportive dress and you can carry it either slung around your wrist or fixed to your belt (up to 1½ inches wide). When used as a belt case, remove the wrist strap with its brass snap hook.

For shooting you remove the Minox 35 GL or EL from the case. The sides are cleverly tailored so that the closed case fits snugly around the Minox, yet the open case allows you to grip the camera from both sides without trouble.

The pocket tripod

The Minox pocket tripod is a very handy camera stand – not much larger than a pencil but very rigid as a table and wall support even on uneven surfaces. It can also serve as a chestpod for horizontal shots with the 35 GL. The Minox pocket tripod includes a cable release – indispensable for tripod shots.

Screw the tripod screw into the bush under the camera. Do not screw the camera too firmly on to the tripod screw but tighten instead the large milled nut of the tripod against the camera body.

The cable release and self-timer adapter

The release of the Minox 35 GL is so feather light that even the weight of a cable release can accidentally trigger it. We therefore recommend an adapter for mounting the cable release and any self-timer on the 35 GL. Close the front cover of the camera and advance the film; the red release button is now locked in its fully-out position. Place the adapter over the release, and screw in the milled screw of the adapter finger tight. Screw the cable release or self-timer into the thread of the adapter. The adapter can remain permanently connected to the cable release or self-timer.

When choosing a self-timer:

Select as light a model as you can find, with adjustable stroke. Set the self-timer first to the shortest release stroke and mount on the 35 GL with the adapter. Increase the stroke in small steps until the self-timer just trips the camera release.

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