

MINOX B

with built-in
coupled exposure meter

OWNER'S MANUAL



MINOX
Camera



MINOX B the all-in-one precision ultra-miniature camera!

Before you start reading the Manual, please fold back this, and the last page, so that you will have the diagrams of the MINOX B constantly at your fingertips for easy reference.

Subject / Field Size and Depth of Field Tables.

Distance Focused On	Subject / Field Size - inch.	Depth of Field
∞ Infinity	-	12" 8" to ∞
12'	105 x 77	6' 1/2" to ∞
6'	53 x 38	4' to 11' 4"
4'	35 x 25 1/2	3' 1/2" to 5' 11"
3'	26 x 19	2' 5/8" to 3' 9/16"
2' 4/8"	20 1/4 x 15	1' 11 1/2" to 2' 11 1/4"
2'	17 1/4 x 12 1/4	1' 8 1/4" to 2' 4 1/4"
1' 8 1/4"	14 1/4 x 10 1/4	1' 6 1/2" to 2'
1' 6"	12 1/4 x 9 1/4	1' 4 1/4" to 1' 8 1/4"
1' 2 1/4"	10 1/2 x 7 1/4	1' 1 1/4" to 1' 3 1/4"
1'	8 1/4 x 6	11 1/4" to 1' 1"
10 1/4"	7 1/2 x 5 1/2	10 1/4" to 11 1/4"
10"	6 1/2 x 4 1/2	9 1/4" to 10 1/4"
8 1/4"	6 x 4 1/4	8 1/4" to 9 1/4"
8"	5 1/4 x 3 1/4	7 1/4" to 8 1/4"

Distances are measured from the front of the camera.

Figures in light type apply when distance scale of camera is set exactly half-way between two adjacent engraved distance markings.

For convenient measuring of close distances, the Minox chain is equipped with beads at 8" - 10" - 12" - 18".

MINOX
Camera

ACCESSORIES FOR MINOX B

Ask your dealer about these useful Minox accessories:

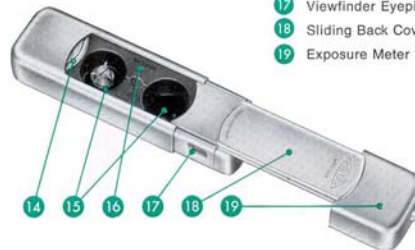
For Picture Taking:
Minox Tripod Clamp - Minox Pocket Tripod - Minox Binocular Attachment - Minox Copying Stand - Minox Reflex Finder - Minox Filter Kits - Minox Flashguns

For Developing and Enlarging:
Minox Daylight Developing Tank - Minox Ultra Fine Grain Developing Kit - Minox Enlarger - Minox Negative Wallet - Minox Negative Viewer

For Projection:
Automatic Slide Projector HP 24 - Semi-automatic Slide projector MINOTACT - Minox Slide Frames - Minox Transparency Viewer - Minox Slide Tray

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- 14 Snaplock for Back Cover
- 15 Film Compartments
- 16 Serial Number
- 17 Viewfinder Eyepiece
- 18 Sliding Back Cover
- 19 Exposure Meter Housing



The Minox B open, ready for picture-taking

- 1 Exposure Meter Disc
- 2 Exposure Meter Button
- 3 Shutter Speed Dial
- 4 Shutter Release Button
- 5 Exposure Counter
- 6 Distance Scale
- 7 Depth of Field Bracket
- 8 Flash Post
- 9 Exposure Meter Indicator Window
- 10 Exposure Meter Window
- 11 Filter Slide
- 12 Viewfinder (Front Window)
- 13 Lens Window

It's easy to get fine pictures with the Minox B but, naturally, the more you know about the camera, the better, more certain, will be the results. This little book wants to show you the way. And, before making any important pictures - of a trip or some special event - it is always a good idea to shoot a magazine of film outdoors, and indoors with flash. This will give you practice in camera operation and provide a check on your outfit. Read the various sections carefully - it's time well spent, and will pay off generously in fine Minox pictures!



inserting a fresh film cassette, blow into the compartment to dislodge and remove small dust particles. Beware of sand and salt water! Only a few drops of salt water suffice to corrode the delicate mechanism of the camera. Should it ever drop into the water, you may perhaps save the camera if you open it and rinse it immediately after the salt water has entered, under running warm fresh water; then dry it at once near a heater or open fire. Rush your Minox to our Repair Department with the notation: SALT WATER DAMAGE. If sand gets into the camera, try to blow it out before you operate the "push-pull" rapid wind; if there is the least "grating", STOP, leave the camera as it is and send it to us for cleaning with the notation: CAUTION, SAND IN CAMERA! Your Minox was carefully tested and checked before leaving the factory and provided with long life lubricants. Do not attempt to disassemble it, and, above all, do not lubricate any part of it. The facilities of our Service Department are at your disposal if the camera should ever require adjustment or repairs.

Opening the camera

The camera is closed when you take it out of its leather case. To open it for picture-taking, grasp it with both hands as shown here, and pull it open as far as it will go. This brings out the viewfinder and lens window, and makes the Minox ready for shooting.



Telescopic rapid wind

After you have taken a picture, 'close' the camera. Then, for the next picture, you pull it open again. That's the secret of the telescopic rapid winding mechanism of the Minox: Each time the camera is closed and re-opened, the film is advanced for the next picture, the shutter is recocked, and the exposure counter moves to the next number, all automatically!

In a hurry? ONE-TWO-your Minox is ready for the next picture. But it's important to close and open a l l t h e w a y every time!

The small circle in the lens window indicates that the shutter is wound ready for the next picture. The circle disappears after you have released the shutter. That's your signal that you must 'push-pull' before you take the next picture. Clear and simple, isn't it?



Hold it steady

A steady and firm hold is the best assurance for good pictures with your Minox. If the camera moves while you are taking a picture, you are bound to get blurred results. Hold the camera firmly, yet relaxed, with your thumbs under the camera, other fingers on top so that the lens and exposure meter window are unobstructed. The illustrations on this and the next page show the most practical way of holding your Minox; it's a firm and steady hold, and nothing covers the lens, viewfinder, or exposure meter window.

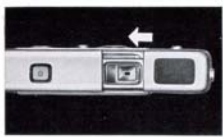
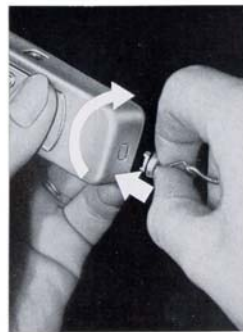
It's a good idea to practice this hold in front of a mirror to check yourself. You'll notice that the same hold is used for horizontal and vertical pictures.

Attaching the measuring chain

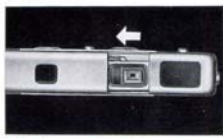
To protect your Minox against accidental falls, always keep it on its chain. Insert the rectangular plug at the end of the chain into the corresponding chain socket of the camera. The springloaded dust cover will recede into the camera. Use the D-ring at the end of the chain in the manner of a screwdriver, inserting it into the slot of the plug disc; turn the plug one-quarter turn to the right. (See illustration.) To detach the chain, reverse these steps: insert D-ring in the slot, turn one-quarter to the left - the plug will jump out of the socket.

It pays to take care of your Minox!

The optical glass window of the lens should always be spotless; finger marks and dirt impair the sharpness and brilliance of your pictures. From time to time wipe the window gently with a soft linen cloth wrapped around a small wooden stick or tooth pick. Keep the film compartments free from dust which may scratch the film; before



Filter slide pushed half-way in: green filter in place.



Filter slide pushed all the way in: grey filter in place, second measuring range switched on.

The green filter absorbs some light and calls for slightly longer than normal exposure: Simply turn the green dot of the meter disc (instead of the open triangle) to the meter indicator needle; that takes care of correcting the exposure when you use the green filter.

Make sure that the filter you use fills the lens window completely.

Remember to push back the filter slide after use. If you want to take the next picture without a filter!

To sum up:

The grey filter prolongs exposure if the normal shutter speed range is insufficient. You may use it with black-and-white or color films.

The green filter is used with black-and-white film for better landscape and cloud pictures. It must not be used with color film.

Taking the picture

Now that you know the proper hold, look into the viewfinder and frame your picture in the luminous rectangle; when you're all set, squeeze the shutter release button gently. A little counter-pressure from the thumb underneath the camera helps to keep the Minox steady. The shutter operates so smoothly and quietly - the picture is taken without effort!

The Minox B requires a minimum of operating steps: Setting distance and exposure is all that's needed - and easy, too.

Opposite page: Correct hold for horizontal pictures

Right: Similar hold for vertical pictures



Distance setting

There are two engraved discs on the control panel of your Minox; the smaller one is the distance scale. It is calibrated from infinity (∞) to 8 inches, with additional markings 6, 3, 2, 1 1/2, 1 ft., and 10 inches. A red dot indicates 12 ft., and also serves as a general "snapshot" setting.

To set a given camera-to-subject distance, rotate the distance dial with your finger on the knurled centre until the desired distance number is at the black dot of the "sharpness zone" bracket.

This little bracket is more important than the black dot in its centre:

Let's say you are taking pictures at a picnic, with the distance setting at 12 feet (that's the red dot between ∞ and 6'). The campfire is 12 feet away, some of the guests are sitting at a table 8 feet from the camera, while one of the youngsters is just bringing an extra log and is now 15 feet away from you. You'll get them all perfectly sharp in your Minox picture, because it gives you a sharpness 'bonus' in front and beyond the focused distance.



Setting the distance scale. Arrow points to sharpness zone bracket.

Built-in filters

The Minox B has three built-in filters. Two filters which can be placed before the lens by means of the filter slide: a grey (neutral density) filter, and a green filter. It even has a third filter: the lens window is an UV-filter.

The filters have basically different tasks. The grey filter cuts down the light when even 1/1000 second would produce over-exposure in brilliant sunshine with fast film. With the grey filter in front of the lens, the exposure meter is automatically switched to its second measuring range. You may use the grey filter with black-and-white or color film. The green filter, on the other hand, is intended to improve the tonal reproduction of natural colors in black-and-white pictures - regardless of light conditions. You will find it particularly helpful in sunny landscapes: Green foliage, lawns, meadows, etc. will show better modulation in the print, the sky will be slightly darkened so that clouds stand out better. But, don't use the green filter with color film; it will turn the whole scene green!

Un-loading

Watch the exposure counter so that you don't "overshoot" the length of the film! After you have taken the last picture on the film - the 15th, 36th or 50th, depending on the film you are using (see film package) - push-and-pull the camera **twice**. No more! Now open the back cover and spread the film gate (as if to load-see page 18).

If the next film has a different ASA number, set the exposure meter for the new ASA number **before** opening the camera to remove the previous film. This saves you an additional step later on. (See page 19 about setting the meter.)

The film cassette will drop out of the camera with slight tapping, or it may be lifted out by its bridge. Store the cassette in its original container, or wrap it in black paper until it is developed.

Before inserting a new cassette into the camera, make sure that the exposure counter is set at the red dot between 50 and 0. (See page 16.)

To sum up:

Exposure counter must be at the red dot before a new film is inserted. Film gate must be open when film is inserted or taken out. The exposure meter is properly coupled with the shutter speed dial, if the black triangle of the meter disc points to the correct ASA number when the camera shutter speed is at '100'.

If you have forgotten the speed of the film you have in the camera - simply turn the camera shutter speed dial to '100' and read the position of the solid black triangle on the meter disc!

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The zone of sharpness from nearest to farthest distance is also called "depth of field". The bracket along the distance scale tells you the extent of the zone of sharpness for every distance setting.

For most of your pictures, you don't have to set the distance critically. It is sufficient if the main object of your picture is within the zone of sharpness. The Minox has exceptionally great depth of field and makes focusing very simple.

You get the greatest zone of sharpness with the red dot (Snapshot Setting): from 6 feet to infinity (∞). This is your ideal choice for all pictures which require quick readiness, fast shooting. You can shoot groups, games, travel pictures, races - whatever comes in front of your camera - as long as the main point of interest is at least 6 feet from the camera.

This snapshot setting (see illustration at top) will take care of most of your pictures.

Snapshot Setting:
Zone of sharpness
6 ft to infinity.
Greatest sharpness
at 12 feet.



Zone of sharpness
4 ft to 11 ft.
Greatest sharpness
at 6 ft.



Zone of sharpness
3 ft to 6 ft.
Greatest sharpness
at 4 ft.



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Use the snapshot setting for scenery only if an important part of the foreground is closer than 12 ft. Otherwise, always use the infinity (∞) setting for landscape pictures (sharpness reaches from 12 ft. to infinity).

Two other settings with zones of sharpness from 4 ft. to 11 ft., and from 3 ft. to 6 ft., respectively, are shown in the illustrations on the previous page. Complete tables showing the depth of field ranges and subject sizes at various distances settings are shown on the inside back cover.

As you can see, the zone of sharpness gets smaller at closer distances, and at very close distance it amounts to inches and less. Therefore, close distances must be set carefully on the distance scale, but that is easy because the safety chain of your Minox has small beads for distances corresponding exactly with the close distance settings engraved on the distance scale. With the chain locked in the camera socket, held taut and at right angles from the camera to the subject, the beads are placed at 8, 10, 12, and 18 inches; the full length of the chain is 24 inches.

To sum up:

You need not set distances beyond 3 feet too critically - make the "sharpness zone" bracket do the work for you.

Set the distance scale so that the important part of the picture is safely within the sharpness zone.

For extreme close-ups always use the measuring chain.

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If the back cover cannot be closed - this is a rare occurrence when the film take-up core is resting on the teeth of the transport wheel in the film compartment - lift out the cassette, pull the camera open all the way, and close again until the film gate opens. This advances the film transport wheel. Re-insert the cassette, and proceed as described on page 18.

Intermediate ASA film speeds can also be set on the exposure meter by using the short lines on either side of the solid ASA triangle, as follows:

Engraved numbers: 25 50 100 200 400
LEFT LINE set on engraved number gives correct reading for: 16 32 64 125 250
RIGHT LINE set on engraved number gives correct reading for: 40 80 160 320 640
(Example: To set meter for ASA 32 - set LEFT LINE on '50'.)

To set meter for ASA 20 - place '25' mid-way between the LEFT LINE and SOLID TRIANGLE.



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points to the ASA number of the film to be used: 25 or 50 or 100, etc. (See page 18 for intermediate ASA numbers.)

Pull the camera 'out'. Press down on crescent-shaped snaplock (white arrow in illustration 3) and slide open the back cover until both film compartments are free.

Turn camera shutter speed dial to '100' which is marked with a red dot. (Illustration 3.)

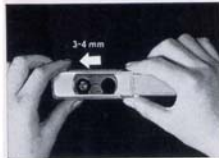
"Close" the camera about 1/4 inch to spread the film gate open; this occurs when the snaplock almost disappears in the camera (illustration 4). You can feel a definite resistance and see the gate open.

The film can be inserted - and taken out - ONLY with an open film gate!

Drop the cassette into the film compartments. (See illustration 5.) (There is only ONE way to insert the cassette - you can't make a mistake!)

Close the back cover until it snaps shut, and push the camera closed. "Pull-push" camera once to advance the exposed film frame into take-up end of cassette (illustration 6).

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The shutter

To produce a well defined, correctly exposed picture, the film must absorb a definite amount of light. The less light comes from the picture area, the longer this light must act on the film - the shutter must stay open for a longer time. Very bright scenes require only a short shutter speed. This length of "exposure" is regulated with the larger dial on the control panel of your Minox. You can set the shutter while the camera is still closed, or after it has been opened, whether the shutter is cocked or not.

To set the shutter speed, place the thumb on the knurled centre of the shutter speed dial while holding the forefinger under the camera and, with the other hand, turn the camera. (See illustration.) It's really very easy. The engraved figures represent fractions of a second: 2 indicates 1/2 second, 1000 is 1/1000 second, etc.

But, don't let these figures worry you - you need not even look at them! Yours is a Minox B - the built-in coupled exposure meter does the thinking for you.



Place thumb on shutter speed dial, hold index finger under camera, turn camera with other hand.

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The built-in coupled exposure meter

You need not estimate shutter speeds, you don't even have to refer to a table or scale, and then transfer shutter speeds from 1/2 to 1/1000 second to the shutter speed dial. The exposure meter is coupled with the shutter speed dial. You simply match a pointer with an indicator needle - that's all! You have already set the correct shutter speed! Only once - when you put the first film into the camera - you set the exposure meter for the "speed" of the film, and couple it with the shutter, (see page 17). You need never touch the meter setting again until you use a film of a different speed.

Using the exposure meter is child's play:

Before you take a picture, look at the scene through the viewfinder - just be careful not to cover the front window of the meter with your finger - and hold down the meter button with the forefinger or third finger of your left hand. After two or three seconds release the button. The indicator needle "freezes" in place.

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Loading with film

Film cassettes should be shielded from bright sunlight. Always load - or un-load - the Minox in subdued light, or in the shade. (If there is no other shade within reach, turn your back towards the sun!) The built-in exposure meter must be set to the speed of the film when you load your first film into the camera, and if you change to a film of different speed. The necessary steps are printed in blue on these pages. If, after completing the first film, you again use film of the same speed, you can ignore the instructions printed in blue. Just make sure that the shutter speed dial is not turned while you are changing films.

Set exposure counter at red dot (see previous page).

Set the exposure meter - while the camera is still closed - by turning the camera shutter speed dial until the ASA film speed pointer (solid triangle) of the meter disc



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The viewfinder

The luminous white frame within the large Minox viewfinder shows you the exact picture area that will appear on the film. The viewfinder image is automatically corrected, at all distances, to be identical with the film image. (Parallax Compensation.) For extreme close-up (8-10 inches), the picture area lies a frame-width within the luminous frame. The viewfinder eyepiece is so large that even spectacle wearers can observe the full viewfinder area; furthermore, they may use the Minox viewfinder without special correction lens.

The exposure counter

The curved window next to the distance scale tells you how many exposures you have already made on a film. Before insert a fresh film, the exposure counter must be set at the red dot between 50 and 0 (see illustration).

If you have just completed a 36-exposure or 15-exposure film, or if the counter is at any other intermediate setting, you must advance the counter by repeating a $\frac{1}{4}$ inch "push-pull" of the camera until the counter is set at the red dot.



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Look at the scene through the viewfinder; hold down the meter button for two or three seconds; release the button and take camera from your eye.

Turn shutter speed dial until open triangle (upper left-arrow) points to indicator needle (upper right arrow) along connecting line. This sets exposure automatically.

You are now ready to take the picture. Hold camera correctly!

At one end of the camera you will see the curved indicator window of the exposure meter, and next to it - surrounding the meter button - a flat disc with an open triangle mark and a green dot. The rotating disc and indicator window are connected by thin black lines. When you turn the shutter speed dial, the meter disc with the triangle mark also turns: both are coupled. Now turn the shutter speed dial until the open triangle is set to the black line that connects with the indicator needle. If the needle is between two lines, set the open triangle between the two lines also.

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By thus pointing the open triangle to the line leading to the indicator needle, you have automatically set the correct shutter speed. If the shutter speed dial happens to be set between engraved numbers, don't worry: The shutter speed scale of the Minox B is matched with the exposure meter, providing an infinite range of speeds between $\frac{1}{2}$ and $\frac{1}{1000}$ second.

If you are using the green filter with black and white film (see page 21), turn the green dot - instead of the open triangle - to the indicator needle. This setting automatically compensates for the exposure difference required by the green filter.

The second measuring range

Outdoor exposure with ASA 25 and ASA 50 film are usually somewhere between $\frac{1}{500}$ and $\frac{1}{1000}$ second. However, with faster films, and for very bright scenes (beach in brilliant sun, glaciers, snow in high mountain areas, etc.) even $\frac{1}{1000}$ second may produce overexposure.

The shutter speed dial cannot be turned past the '1000' mark to line up the meter disc with indicator needle. Therefore, a second measuring range has been provided.

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To sum up:

The Minox B has a built-in exposure meter coupled to the shutter speed dial which regulates shutter speeds from $\frac{1}{2}$ to $\frac{1}{1000}$ second; you simply point a triangle mark to the indicator needle of the exposure meter.

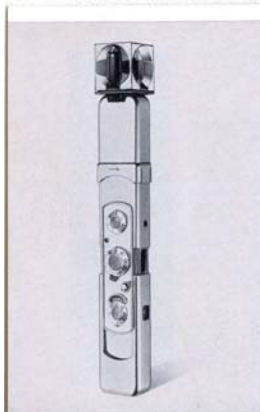
When the scene is so bright that even $\frac{1}{1000}$ second would produce over-exposure, slide the neutral density filter in front of the lens. The exposure meter switches automatically to its second measuring range. Shutter speeds fall within the normal speed range. Exposures of longer than $\frac{1}{2}$ second are not automatically set on the shutter speed dial. However, the position of the shutter speed dial after 'matching' the indicator needle might indicate up to 2 seconds exposure which must be obtained by using the B or T setting.

No F-stop setting - an important Minox advantage

If you are an advanced amateur photographer, you may wonder why there has not yet been any mention of f-stops. It's simply because the Minox has no f-stops! The 15 mm Complan lens of your Minox yields such extreme depth of field and gives such outstanding definition over the entire film area that an adjustable lens diaphragm could be omitted - saving you an extra operation necessary with other cameras. That's another reason why the Minox is so easy to use!

The Minox always works at full f/3.5 lens opening.

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Flash pictures

You can get fine flash pictures with your Minox B because the shutter is synchronized both for electronic flash units and for flash-guns using flash cubes. Just remember to set the exposure dial correctly.

For electronic flash - to $\frac{1}{1000}$ sec or slower;

For flash bulbs or cubes - to $\frac{1}{50}$ sec or slower.

Left: Minox Cubeflasher for 4-shot flash cubes; weighs just 1 oz.

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To switch to second measuring range: push filter slide all the way in.

If you cannot line up the open triangle with the indicator needle, push the filter slide above the viewfinder window all the way in (see illustration). This puts a neutral density (grey) filter in front of the lens, and switches the exposure meter automatically to compensate for the exposure difference imposed by the filter.

After this "switch", proceed as usual: Look at the scene through the viewfinder - hold down the meter button two or three seconds - turn open triangle to indicator needle. The neutral density filter now puts the exposure into the normal speed scale.

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Whenever the resulting shutter speed is slower than $\frac{1}{500}$ second ($\frac{1}{1000}$, $\frac{1}{1000}$, etc.), remember to brace your hands with the camera against a wall, tree, or other firm support. Otherwise a blurred picture may result. Of course, the Minox Tripod is ideal for this purpose; in fact, it is indispensable for longer (B and T) exposures.

B and T exposures

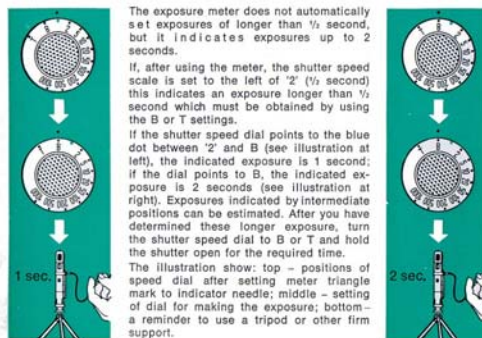
In addition to speeds of $\frac{1}{2}$ to $\frac{1}{1000}$ second, the shutter speed dial has the letters B and T engraved. What do they mean?

B: The shutter opens when the shutter release button is pressed down and closes again after you let the button go;

T: The shutter opens when the shutter release button is pressed down and stays open until the button is pressed a second time.

Both settings are designed for longer exposures: 'B' for exposures from one to several seconds. 'T' for still longer exposures. For such extended exposure, the Minox must be placed on a solid support, or mounted on a tripod with the camera clamp, and released with a cable release. The Minox Tripod comes already equipped with a cable release.

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The exposure meter does not automatically set exposures of longer than $\frac{1}{2}$ second, but it indicates exposures up to 2 seconds.

If, after using the meter, the shutter speed scale is set to the left of '2' ($\frac{1}{2}$ second) this indicates an exposure longer than $\frac{1}{2}$ second which must be obtained by using the B or T settings.

If the shutter speed dial points to the blue dot between '2' and B (see illustration at left), the indicated exposure is 1 second; if the dial points to B, the indicated exposure is 2 seconds (see illustration at right). Exposures indicated by intermediate positions can be estimated. After you have determined these longer exposure, turn the shutter speed dial to B or T and hold the shutter open for the required time.

The illustration shows: top - positions of speed dial after setting meter triangle mark to indicator needle; middle - setting of dial for making the exposure; bottom - a reminder to use a tripod or other firm support.

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