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Kodak Retina IIa

AND HOW TO USE IT

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Make friends with your "Retina". If you do it will bring more fun to your hours of leisure and lend a hand with any job; it will never let you down. Learn to explore and to enlist the great possibilities now open with this precision camera and its superior equipment . . .

But first of all, get well acquainted with it.

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THE FIRST STEPS
How to open the camera . . . and how to close it.
How to hold it

POINTS THAT MATTER
Lens aperture – Exposure – Distance –
Depth of Field

HOW TO FOCUS
Distance – Lens aperture – Exposure – Zone Focusing – Focusing for Infra-red
Operating the Film Winding and Shutter Cocking Mechanism – Release

FOUR FEATURES OF IMPORTANCE
Depth of Field Scale – Fully-synchronized Shutter for Flash Shots –
Film Release – Film Indicator

SETTING TO WORK
Loading the Film – The Exposure Counter – Taking the Picture –
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WIDEN YOUR SCOPE WITH ACCESSORIES
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Table Tripod – KODABLITZ – Lens Hood – Filters

TO SUM UP – Film Changing Made Easy
THE CAMERA PARTS

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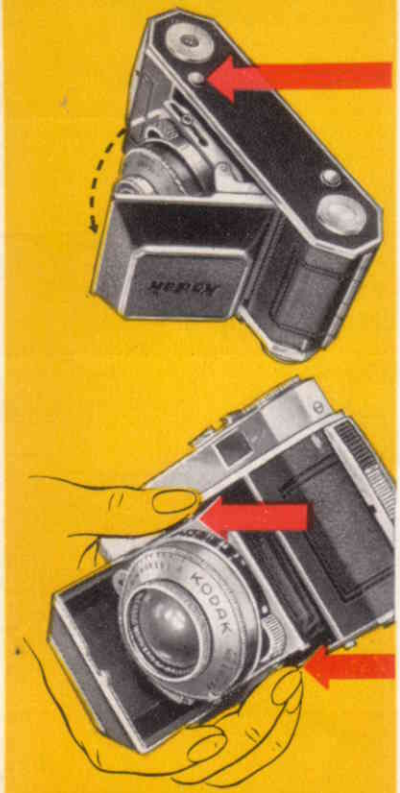

How to Open the Camera

A slight pressure on the button (1) – the smaller of the two buttons underneath the camera – opens the front. Then draw down the bed carefully until you hear it click into position.

Before closing the camera make sure that the focusing scale (3) is set to ∞ (inf.). Only then can you close the camera. Do not force it.

. . . And how to Close it

Release the bed by simultaneously pressing in the two closing buttons (2) on each side of the front plate. It will now close up easily. The shutter release (12) is locked once the camera is closed.

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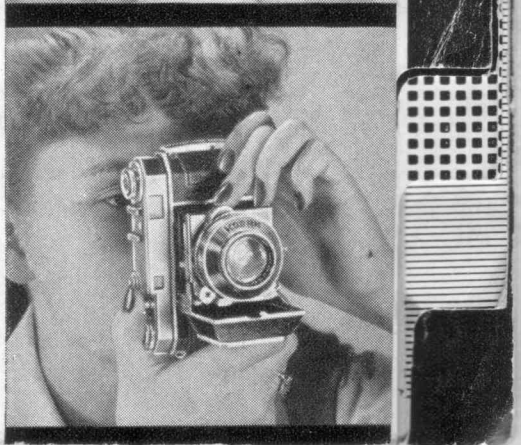
STEPS

How to Hold it

for horizontal pictures. The "Retina" body is shaped for your grip. The camera nestles firmly and safely in both hands, with your right index finger resting on the body shutter release (12) on top of the body.

Just try this a few times until you have got the knack of holding the camera correctly. Get used to holding the camera even with gloves on, for you are sure to want to use your "Retina" in almost any place and in any weather, too. Also try gripping the camera with one hand only in case you have to hold on to something else with the other.



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Lens Aperture · Exposure Time ·

To produce a correct negative, the film must receive a definite amount of light through the lens. On a sunny Summer day more light will pass through the open lens in a given time than, for instance, on a dull Winter afternoon. So in the latter case we must keep the lens open for a longer time to get the same amount of light acting on the film. In other words, we need more exposure. The shutter with its varying speeds will regulate the necessary supply of light.

However, it is not the only means of doing so. Another control is the lens aperture or lens stop. It acts rather like a water tap; the wider you open it, the more light passes in a given time. And the more you close it down, or stop it down – as the photographic term goes – the less light can come through the lens.

The lens stop has yet another important function. It not only regulates the light, but also controls the so-called depth of field. How does it do so?

The lens defines really sharply only the subjects on which it is focused. This maximum sharpness decreases gradually, so that there is a region in front of and behind

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the focused subject within which the picture is not noticeably unsharp. That region is the depth of field.

This depth of field increases as you stop down the lens and also increases with the focusing distance. For instance, at f/8, when the lens is focused for 15 feet, the depth of field extends from about 9 feet to about 50 feet: at f/5,6 with the lens focused for 50 feet, the depth is from 20 feet to ∞ (inf.). At 50 feet the depth at f/4 extends from 25 feet to ∞ (inf.).

These facts are worth some thought. For the whole secret of a technically good negative is the right choice of lens aperture shutter speed and distance setting. You will soon find the combination to suit your own photography with a little practice. Until then you can mostly manage with the focusing zones recommended on p. 13 which provide ready-made and adequate depths of field for a near and a distant region of subjects.

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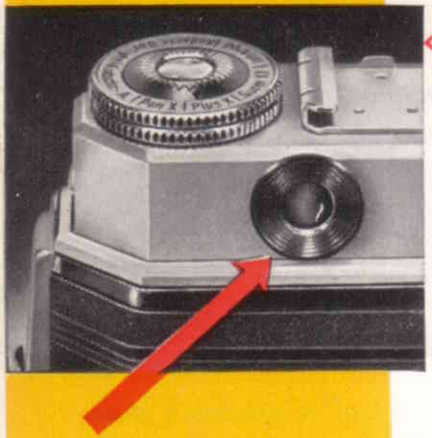

with the view and range finder

To make sharp focusing really accurate, your "Retina" is fitted with a combined view- and rangefinder. Its use is simple enough. When you sight your subject through the round eyepiece (14), you will see a double image of it in the smaller bright area of the rangefinder. Turn the focusing knob (4) until the two images fuse into one. The lens is then sharply focused.

To make sure that the view through the finder corresponds to that of the camera lens, look through the finder so that the brighter rectangular area is exactly in

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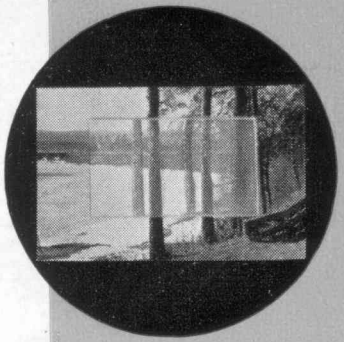
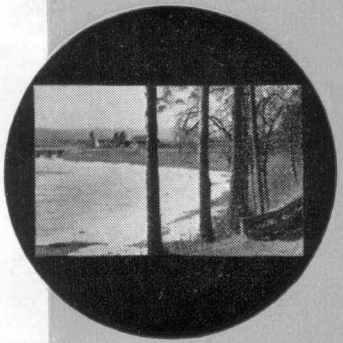
FOCUS

the middle of the field of view when taking the picture.

With close-ups (3.5–6 feet) you cannot avoid a slight discrepancy between the finder image and the picture on the film. This is the parallax error. To compensate for it, tilt the camera upwards a little before pressing the release.

If your eyesight is defective and you do not wear spectacles when using the finder you may not be able to see the images sharply in the view- and rangefinder. For such cases special correcting lenses to screw into the eyepiece (14) are available to order. No correcting lenses are available for astigmatism.





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with the focusing scale

The focusing scale (3) shows distances in feet 3.5; 4; and so on to ∞ (100 feet or beyond) with their corresponding divisions. The numbers are white on black to make them more easily readable. Opposite this scale, in the centre of the depth of field scale (11) you will find a heavy black line with a triangle at its end. Turn the focusing knob (4) to bring this index mark opposite the figure corresponding to the distance of your subject from the camera. Your "Retina" is now sharply focused.

For near subjects (remember the shallow depth of field) measure the distance between the lens and subject as accurately as possible. For more distant subjects you may estimate the distance, or pace it (one average pace is about 2.5–3 feet). Subjects more than 100 feet away count as infinity (∞).

Infra-red Shots

The depth of field scale carries a small red dot between the index mark and the figure 2 and 4 You use this dot in place of the black index mark when exposing infra-red film. In **other words, turn the focusing** knob to bring the red dot opposite the figure for your **subject distance. For infra-red** shots you must use a suitable infra-red filter in front **of the lens.**

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The Lens Aperture

First a few words about the lens itself. Your "Retina" is fitted with a six-element "Retina"-Xenon or Heligon of f/2 maximum lens aperture and a focal length of 50 mm. This lens is hard-coated (you can recognise that by its bluish-violet sheen) to eliminate internal reflections and is specially corrected for colour photography. The lens is the eye of your camera. Do take care of it. If you want clear and sharp pictures, your lens must be clean. The best material for cleaning it is a clean, soft, lintless cloth. Sudden changes of temperature may condense moisture on the lens surface. Wait until this disappears rather than try to wipe it off. Above all, never attempt to screw the lens apart. This may easily lead to lack of sharpness and loss of quality in your negatives. **And now the Lens Aperture.** The lower part of the shutter casing carries a scale with the figures 2, 2.8, 4, 5.6, 8, 11 and 16. The lowest number (2) marks the largest lens aperture, and the highest number (i. e. 16) the smallest aperture. The aperture numbers in between are so arranged that the light the lens lets through is halved as you go from each number to the next higher one. This means that, other things being equal, you must expose twice as long when you stop down from one aperture number to the next. If for instance the exposure time at f/5.6 is $^1/_{100}$ second, you would need $^1/_{50}$ second at f/8, or $^1/_{25}$ second at f/11. In all these cases the film will still receive the same amount of light, provided the lighting conditions remain the same. To set the lens aperture simply push the lever (5) to the required number.

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The Exposure Time

The shutter of your "Retina"
is a Synchro-Compur and offers exposure times (shutter speeds) of 1, 1/2, 1/5, 1/10, 1/25, 1/50, 1/100, 1/250 and 1/500 second. You will find these values engraved as whole numbers on the upper part of the shutter casing. Thus 2 means 1/2, 5 means 1/5 and so on. In addition you will also find the letter "B" for exposures of unlimited duration. To set the exposure time, simply turn the milled shutter speed ring (6) until the dot in the cut-out is opposite the desired time.

You can adjust the shutter speeds before or after cocking the shutter. But set 1/500 second preferably before cocking, since for technical reasons it is easier to do so. To set 1/500 second after cocking requires a little additional effort, although it will not harm the camera.

To avoid blurred pictures, use a tripod or other firm support for exposures longer than 1/25 second. The tripod head screws into the socket (20) underneath the camera. A further, quite inexpensive accessory for making time exposures free of camera shake is the cable release with locking screw. The cable release screws into the thread of the body shutter release (12).

You will find an exposure guide at the end of this booklet. Alternatively, you can get the correct exposure from an electric exposure meter.

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Zone Focusing

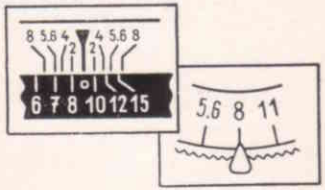
We mentioned before that a technically good negative depends on the skilled combination of distance setting, exposure time and lens aperture. You will need a little experience to get this right every time. Moreover, you often have to shoot without spending much time on working out the ideal combination (as in sports and action shots, photographing children and animals etc.) if you do not want to miss the picture altogether. The "Retina" solves this problem for you with its settings for near and distant focusing zones.

Near Subjects

Set the focusing scale to the small circle between 8 and 10 feet. Use lens aperture f/8. This gives a depth of field (zone of sharpness) from about 7 to 15 feet.

Distant Subjects

Set the focusing scale to the small circle near 25 feet. Use lens aperture f/8. This gives a depth of field (zone of sharpness) from about 12 feet to ∞ (inf.). **Remember** to set the focusing scale to ∞ (inf.) before you close the camera.



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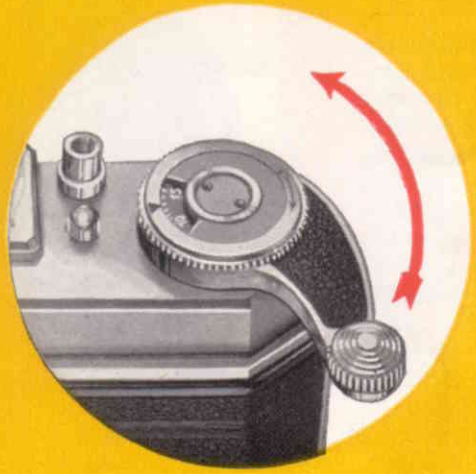

Operating the Film Winding

When you have set the distance, lens aperture and shutter speed (the order doesn't matter), work the rapid winder. Pull it out in one movement, as far as it will go, then let it fly back. This movement cocks the shutter and at the same time winds the film.

If the lever does not fly back, you didn't pull it out completely. The winder will stay put in any position until film and shutter are fully wound.

Now the camera is ready to shoot. If you know by now how to hold the camera (as described on p. 5) your

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and Shutter Cocking Mechanism

index finger will be resting in the right place-on the body shutter release (12)

Compose the picture in the view and range finder, gently press the release, and you have taken the picture.

You will notice how smoothly the release works, ensuring pictures free of camera shake.

When making time exposures (shutter set to "B") the shutter remains open as long as you press the body shutter release. Use a cable release for time exposures.

Mike Butkus
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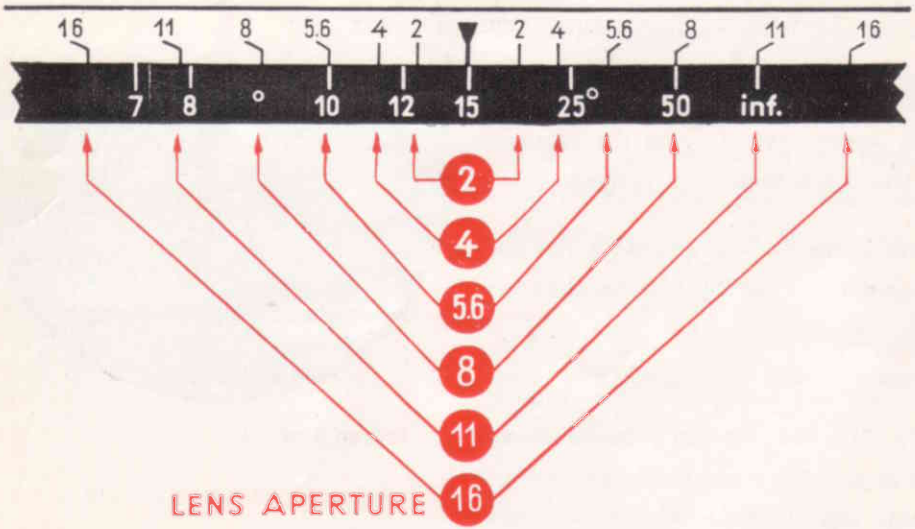

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FOUR FEATURES OF IMPORTANCE

1. The Depth of Field Scale

You will have noticed on your "Retina" that the numbers 2, 4, 5.6, etc. of the lens aperture scale are repeated opposite the black focusing scale ring, to the left and right of the index mark. This is the depth of field scale (11). On it you can quickly read off the depth of field for any subject distance and lens aperture. If, for instance, your "Retina" is focused for 15 feet, then at f/8 the range of distances on the focusing scale between the two lines marked 8 on the scale represents the depth of field. In our example the one 8-line will be in the middle between 8 and 10, and the other opposite 50 on the focusing scale. This means that with the lens focused for 15 feet and set to lens aperture f/8 your depth of field extends from about 9 to 50 feet.

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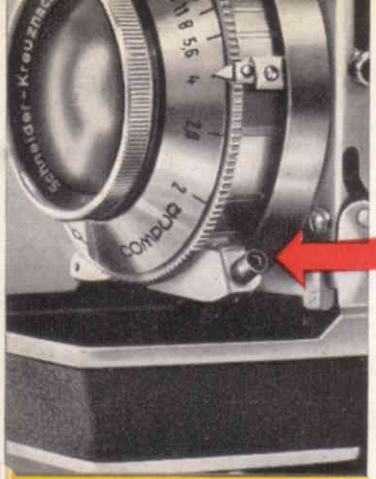

2. The Fully-Synchronized Shutter

The Synchro-Compur shutter of your "Retina" is fully synchronized. The following pages will give further details. With this shutter you can make flash shots with the "KODABLITZ" or an electronic flash unit at all shutter speeds in just the same way as a press photographer.

The external distinguishing features of the shutter are the green synchronizing lever (8) for the "X" and "M" settings (9), and the flash socket (10). The "KODABLITZ" (see page 33) is fixed to the tripod bush (20) of the camera. The electrical connection between the flash unit and the Synchro-Compur shutter consists of a flash cable, the plug of which is plugged into the flash socket (10) of the shutter.

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We definitely advise you against fixing a flash gun in the accessory clip (21) of the "Retina", as this type of unit is far too heavy for the accessory clip which is designed to take precision accessories.

A Good Flash Shot . . .

depends on choosing the right lens aperture and shutter speed for the flash distance and speed of the film used.

You can look up the required exposure data in the tables enclosed with flash bulbs and electronic flash outfits. Also, refer to our table on page 20 which shows what shutter speeds are suitable for which of the "X" and "M" settings with various types of flash bulbs and electronic flash.

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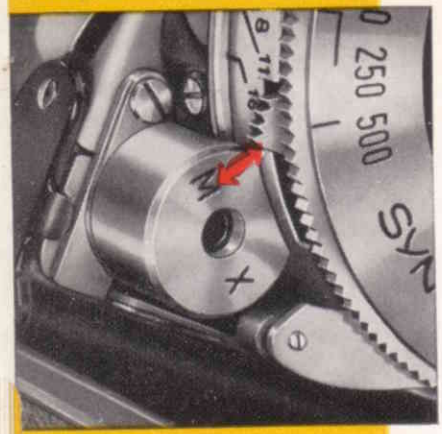

To set your shutter to "X" or "M", simply push the synchronizing lever of the appropriate mark as far as it will go.

This is the only setting required, since cocking the shutter automatically prepares it for the flash exposure.

With electronic flash units which usually have no firing delay, the flash takes place simultaneously with the release of the shutter (synchronizing lever set to "X").

The process is different with flash bulbs as mainly used by amateurs. Here the battery current first ignites an explosive paste within the bulb, and

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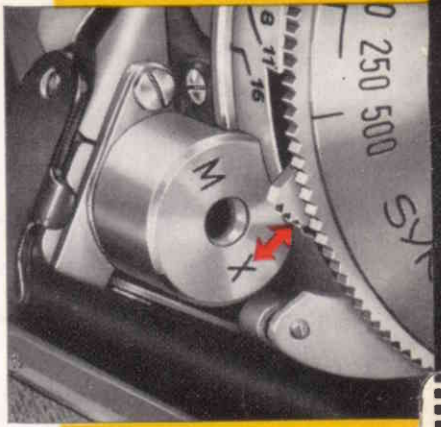
this in turn fires the actual flash. There is thus a certain delay between the moment of release of the shutter and the peak brightness of the flash. The Synchro-Compur shutter therefore incorporates a mechanism which allows for this firing delay (synchronizing lever set to "M").



Just three more points:

1. Never use flash in places where there is any risk of explosion.

2. The fired bulbs are hot, so use the ejector on the flash gun rather than your hands.

3. Avoid shiny surfaces in the background (windows, mirrors, pictures behind glass, highly polished furniture, etc.) which might reflect the flash into the lens.

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SUITABLE SHUTTER SPEEDS (SECONDS)

Flash bulbs	Class	F		M				S			X	F
	Make	General Electric G.E.C. Mazda (B.T.H.) Westinghouse	Sylvania	Philips	General Electric G.E.C. Mazda (B.T.H.) Westinghouse	Sylvania	Sylvania	Philips	General Electric Westinghouse	Sylvania	Electronic Flash	
	Type	SM*	SF*	PF 14* PF 25*† PF 60†	No. 5*† No. 11*† No. 22†	Press 25*† Press 40† Press 50 No. 0	No. 2	PF 100†	No. 50	No. 3	Instantaneous firing	Relay fired with 5 ms delay
Synchronizing lever set to X: Exposure longer than flash		1 – 1/50		1 – 1/25			1 – 1/25	1 – 1/10			Synchronizing lever set to X	
											1 – 1/500	1 – 1/50
Synchronizing lever set to M: Exposure shorter than flash		Not suitable for M-synchronization		1/50 – 1/500			1/50–1/100	1/25 – 1/50				

* With small bayonet cap (S.C.C.). † Also available tinted for colour film exposures

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3. The Film Release

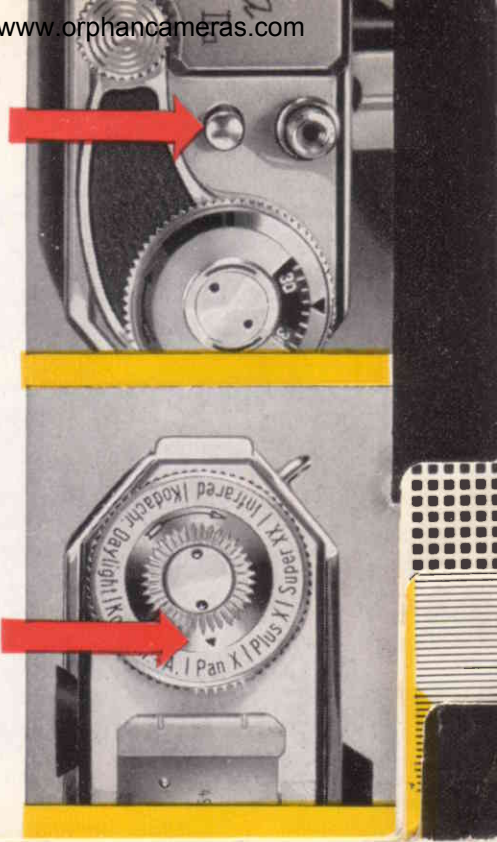
On top of the camera, next to the shutter release, there is a small button (13) of great importance.

It is used when changing partly exposed films (see p. 38.

In addition, you can rectify any jamming which may lock the mechanism of the rapid winder, by simply depressing this button, without losing a frame or risking double exposures. If, however, pressure on the button does not release the winder, this automatically tells you that the exposure counter has reached No. 1, and your film is finished. In that case proceed as described on p. 26.

4. The Film Indicator

To remind you of what type of film you have in your camera, the top of the rewind knob (17) carries a film indicator (18) with data on all generally available film types. Hold the rewind knob with two fingers, and turn the inner radial ring until the index mark points to the type of film in the camera.



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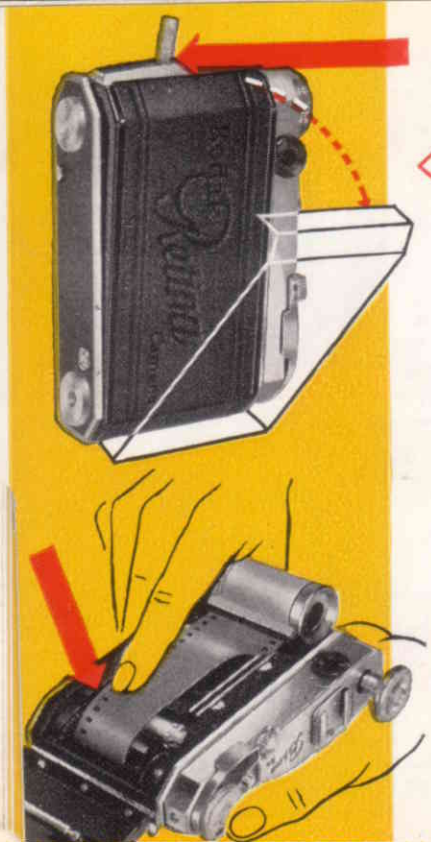

Loading the Film

Now that you know all the steps and controls for working with your "Retina" let us put in a film.

Open the back of your camera by lifting the lock for camera back (19) and draw out the rewind knob (17) to its fullest extent. Then turn the built-in take-up spool towards the back of the camera until the slot in the spool is at the top. Thread the trimmed end of the film protruding from its cassette into this slot as far as possible. Pull the film over the film-guides, getting just enough film out of the cassette to allow you to insert the latter in the empty film chamber. Make sure that a tooth of the transport sprocket engages in a perforation hole of the film.

Now push the rewind knob (17) fully back into the camera body, at the same time turning it in the direction of the arrow. Close the back and lock it by folding down the lock (19).

This way of loading the film has proved to be the

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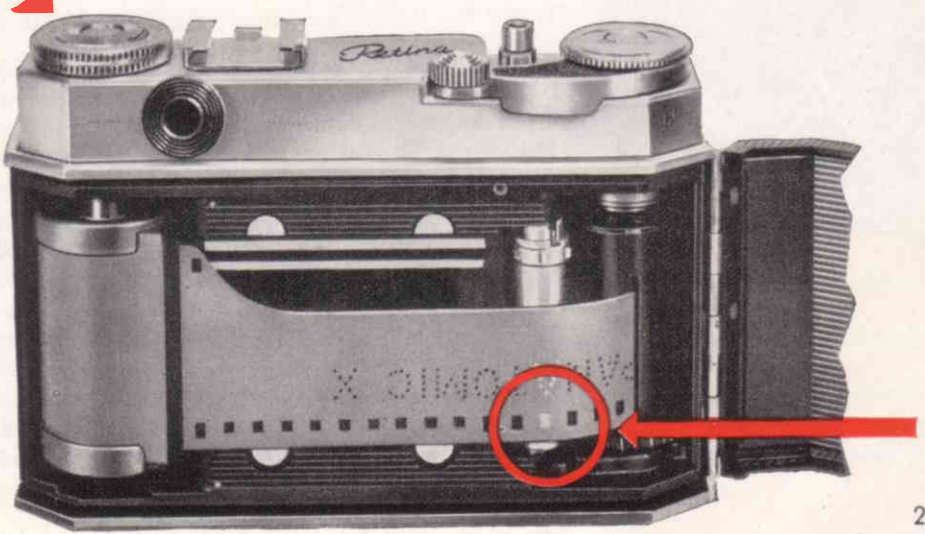
TO WORK

simplest and also the most suitable should you want to change a partly exposed film (p. 38).



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The Exposure Counter

The rapid winder (7) incorporates a window in which you can see numbers and markings engraved white on black. This is the exposure counter (15) which shows you how many frames on your film are still unexposed. To set the exposure counter, proceed as follows:

After you have loaded the film, turn the milled ring (15) in the direction of the arrow until the diamond mark ◇ next to the figure 36 points to the triangular mark △. When using 20-exposure cartridges, set the diamond mark ◇ next to the figure 20 to the triangle △. Now advance the film several times with the rapid winder (pressing the shutter release or – with the camera closed – the film release button (13) each time) until the exposure counter points to No. 36 or 20 respectively. Once the exposure counter indicates one of these two numbers, do not, of course, release any more, or you will lose an exposure. If the rewind knob turns in the direction opposite to the engraved arrow, you can be sure that the film is correctly loaded and advanced.

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Your camera is now ready for the first exposure.

This ingenious exposure counter mechanism has the following practical advantages:

1) By shooting three blank exposures you are sure of a perfect first picture. Experience has shown that the very beginning of the film may easily get fogged by light leaking into the mouth of the cassette.

2) When the exposure counter reaches No. 1, and you have thus made the last exposure, the rapid winder and shutter release are automatically locked. Thus the camera reminds you that you have finished your film. In addition, you cannot accidentally pull the film end out of the cassette. You unlock the mechanism again when you turn the milled ring (15) in the direction of the arrow.

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Removing the Film

When you have exposed the whole film and the exposure counter shows No. 1, press in the clutch knob (16) underneath the camera. Pull out the rewind knob (17) to its first stop to allow easier rewinding, and turn it until the clutch knob (16) ceases to turn.

To show the rotation of the clutch knob more clearly, it carries a black dot.

The whole length of the film is now wound back into its cassette. All you have to do now is to open the back of the camera and fully pull out the rewind knob. You can then easily take out the cassette.

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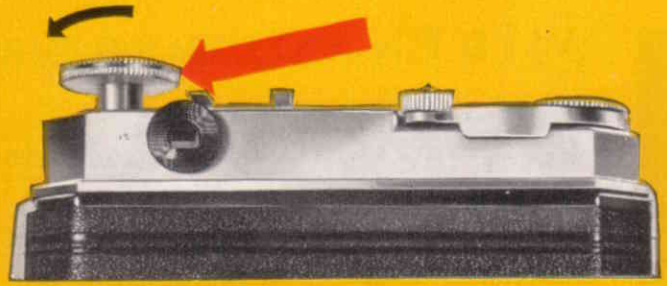
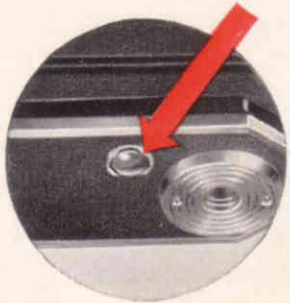


Do not load or remove the film in direct sunlight, or you may fog the first few exposures. If possible, rewrap the exposed film in its original packing.

Please make sure that the bottom of your ever ready case contains a large enough hole in a position corresponding to the clutch knob. Otherwise the clutch knob may be pressed in, upsetting the film transport. The proper ever-ready case for the "Retina" IIa does of course, allow for that.



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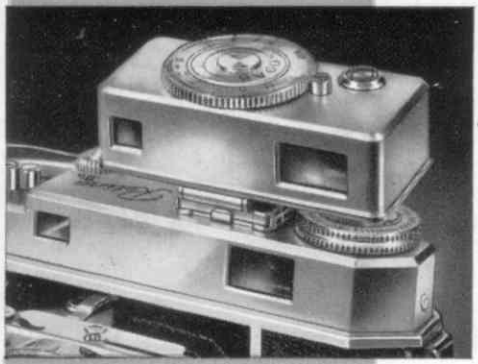

WIDEN YOUR SCOPE

The »Retina« Close-up Range Finder

Designed to the high "Retina" standards of quality and precision, this instrument serves as a combined view- and rangefinder. It fits into the accessory clip of the "Retina" and is used in conjunction with a set of supplementary lenses for close-ups from 36 down to 8½ inches, at scales of reproduction from 0.055 to 0.225. It thus opens up a whole new world for the "Retina" owner.

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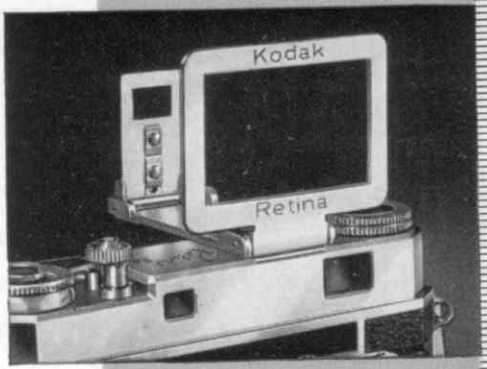
WITH ACCESSORIES

The »Retina« Sports Finder

This important accessory for photographing very fast-moving subjects fits into the accessory clip of the camera. With it you can sight and follow your subject in full size before it enters the actual field of view. Its position on the camera automatically eliminates any lateral parallax while the vertical parallax is compensated by moving the viewing aperture according to a fitted scale. The finder can be folded up while still on the camera. When not in use, it is kept in a leather case.



www.orphancameras.com

The »Retina« Table Tripod

is a practical and versatile piece of equipment to widen the scope of, and simplify work with the close-up-focusing attachment. This universal tripod is a useful aid to amateur and professional alike. The research worker, the engineer and the scientist can conveniently and successfully turn it to particularly interesting tasks. When used in connection with a set of three cemented high quality supplementary lenses, the table tripod enables the "Retina" to make pictures up to a scale of reproduction of 0.5; which opens up the whole field of macro-photography. Thus the "Retina" combined with the table tripod becomes a close-up and copying camera.

www.orphancameras.com

The »KODABLITZ«

This handy, light-weight, and extremely versatile flash gun can be fixed to your "Retina" in a moment. With it you can even take shots at the fastest shutter speeds in total darkness.

The "KODABLITZ" can be used with a capacitor unit. It is fully protected against short-circuits. Further advantages of this excellent unit are very light weight and an ejector mechanism for used bulbs. Suitable for all flash bulbs with bayonet cap (S.C.C. or A.S.C.C.).

www.orphancameras.com

»Kodak« Lens Hood

makes attractive against-the-light pictures safe. But shots by side-light also gain in brilliance when you use the lens hood. No exposure should really be made without it.

The "Retina" lens hood can be attached to the lens even with a filter screwed on. It can also be used together with supplementary lenses or supplementary lens plus filter.

»Kodak«-Filters

for correct tone reproduction or for special effects are available in pale yellow, medium yellow, green, orange, blue, red or as ultra-violet protective filter. They are fitted with screw-in mounts and are marked F I/32 to F VII/32 UV.

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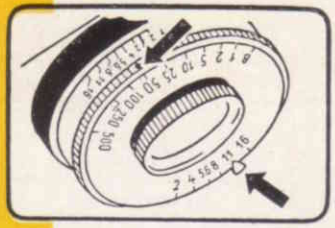
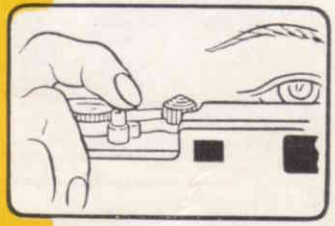
TO SUM UP

It may be that all these technical data will strike you at first as a little confusing. In fact photography is much simpler than it looks to the beginner. Fundamentally there are only three things to take a picture.



1

2



3

1. Set distance, lens aperture and shutter speed. Remember the focusing zones.

2. Wind the rapid winder, thus cocking the shutter and advancing the film.

3. Compose the picture in the view – and range finder and release the shutter.

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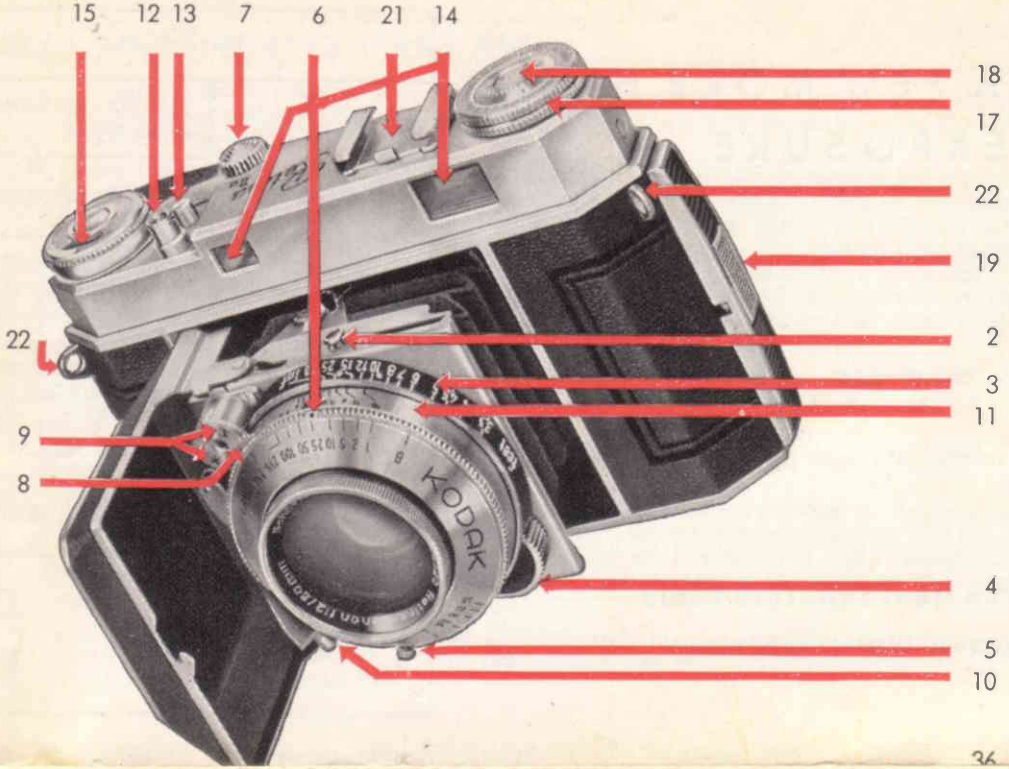

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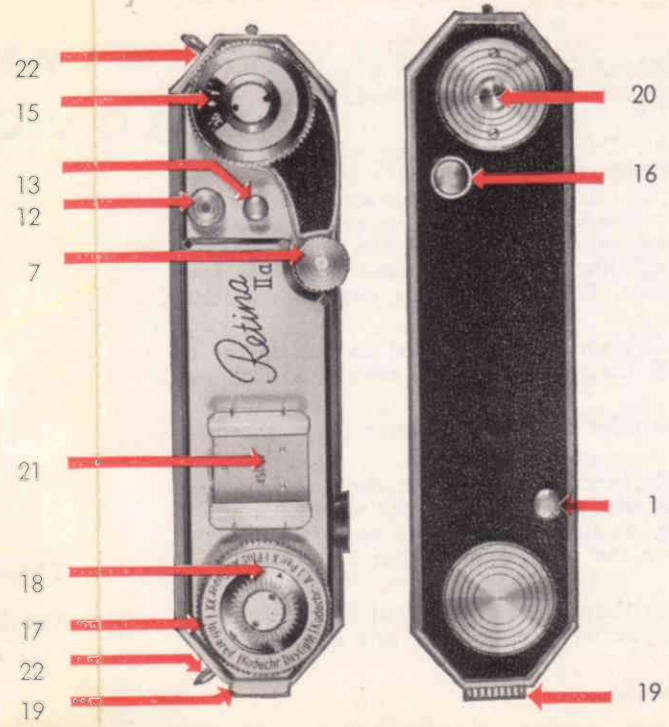

THE CAMERA PARTS

1 Button for opening camera
2 Buttons for closing camera
3 Focusing scale
4 Focusing knob
5 Lens aperture lever
6 Shutter speed ring
7 Rapid winding lever
8 Synchronizing lever
9 Marks for "X" and "M" synchronizing settings
10 Flash socket
11 Depth of field scale
12 Shutter release button
13 Film release button
14 View and range finder
15 Exposure counter
16 Clutch knob for rewinding
17 Rewind knob
18 Film indicator
19 Lock for camera back
20 Tripod bush
21 Accessory clip
22 Carrying eyelets

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Film Changing Made Easy

You may want to change from one partly exposed film to another (e. g. from black-and white to colour). To avoid losing any exposures, note these few additional points when loading the film.

Open the camera, and wind the rapid winder. Count off a number of perforations from the film end – say 8 – and mark this perforation hole with a nick in the edge of the film. Turn the built-in take-up spool against its normal winding direction until you can insert the film end into the slot. Push in the film so far that the marked perforation hole engages in a tooth of the transport sprocket. Make sure that the film rides properly in the path provided for it, pulling just enough film out of the cassette so that you can insert the latter in the empty film chamber. Now proceed as described under "Loading the Film" (p. 24).

Set the exposure counter to the appropriate ◊ mark (the one next to No. 36 for a 36-exposure cartridge, or the one next to 20 for a 20-exposure cartridge such as "Kodachrome").

Press the shutter release, and wind the rapid winder until the exposure counter shows No. 36 or No. 20 respectively.

If the film was already partly exposed, for instance up to No. 5, depress the film release button. You can then advance the film with the rapid winder without having to press the shutter release. Continue winding on the film until the required picture number (the next unexposed frame) appears on the exposure counter. The camera is now ready to shoot again.

The method is really much simpler to carry out than to describe, and if you make a habit of loading in this way from the outset, you will never have any difficulties in changing partly exposed films.

AND A FEW MORE HINTS FOR EXPOSURE

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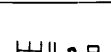
The »Retina IIa« - Exposure Table for Black-and-White Subjects

The Subjects		Recommended Lens Aperture	Weather	"Kodak" Film Plus-X	"Kodak" Film Super-XX
	Seaside, beach and snow shots	11–8	○	1/100 - 1/250	1/250 - 1/500
			▨	1/50 - 1/100	1/100 - 1/250
	Open landscapes	8	○	1/50 - 1/100	1/100 - 1/250
			▨	1/25 - 1/50	1/50 - 1/100
	Landscapes with foreground	8 5.6	○	1/25 - 1/50	1/50 - 1/100
			▨	1/25 - 1/50	1/50 - 1/100
	Average snapshots, groups, street scenes	8–5.6	○	1/50 - 1/100	1/100 - 1/250
			▨	1/25 - 1/50	1/50 - 1/100
	Sports, action, rapidly moving subjects	4 or 3.5	○	1/250 - 1/500	1/500
			▨	1/100 - 1/250	1/250 - 1/500
	Figures in the shade	4	○	1/25 - 1/50	1/50 - 1/100
			▨	1/10 - 1/25	1/25 - 1/50
	Figures in a light room	2.8 or 2	○	1/2 - 1/25	1/5 - 1/50
			▨	1 - 1/10	1/2 - 1/25
			○	1/5 - 1/50	1/10 - 1/100
			▨	1/2 - 1/10	1/2 - 1/25

○ = Clear sun

▨ = Overcast sky

The table is valid for the months of May to August between 10 a.m. and 4 p.m.

Use double the exposures during March, April, September, and October; or between 9 and 11 a. m. and 4–6 p. m.

Use four times the exposures between the winter months of November to February.

Use the focusing zones. For Kodak-"Panatomic-X" Film give twice the recommended exposure.

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