



Retina

REFLEX III

CAMERA

Kodak

With the purchase of this camera you join millions of enthusiastic RETINA camera owners all over the world. The high precision RETINA REFLEX III is the most advanced camera in the RETINA range. It is a single-lens reflex camera incorporating automatic exposure control, with meter needle visible in the viewfinder. Other noteworthy features in the specification include brilliant full area ground glass viewing screen, split-image bright-field rangefinder, and automatic depth-of-field indication. The camera is fitted with the world-famous 50 mm Schneider-Kreuznach lens (interchangeable lenses available in focal lengths from 28 to 200 mm). These high-definition lenses, fully colour-corrected, give exceptional image sharpness.

The RETINA REFLEX III is truly a star among 35 mm cameras.



Before you take any important or unrepeatable pictures, expose a roll of film and have it processed immediately. This provides a check on your picture-taking technique and, incidentally, on your equipment.

Quick notes for your

R E T I N A R E F L E X I I I

Set the shutter speed

Turn the setting wheel until the required shutter speed clicks in place.

Set the automatic exposure control

Sight the subject and turn the setting wheel until the needle in the finder registers between the brackets.

Focus and shoot

Turn the lens to bring the subject into sharp focus either on the ground glass screen or by means of the split-image rangefinder.

Slowly press the shutter release.

For more details refer to the following pages.



Setting the shutter speed

Turn the setting wheel (a) underneath the lens barrel until the required shutter speed **clicks in place** opposite the index (b). Our illustration shows the shutter speed set to $1/60$ second. For taking pictures of fast moving subjects as in sports events a faster shutter speed should be set.

The shutter speed cannot be changed until the lens opening scale reaches $f/1.9$ or $f/22$. At either of these points a slight resistance will be felt. The setting wheel must be turned to overcome this resistance, if the shutter speed is to be changed.

The black figures on the shutter speed ring indicate fractions of a second: 1 = 1 second, 2 = $1/2$ second, 4 = $1/4$ second . . . , 60 = $1/60$ second, 125 = $1/125$ second, etc. (Use of the letter "B" and the green figures is explained on page 23.)



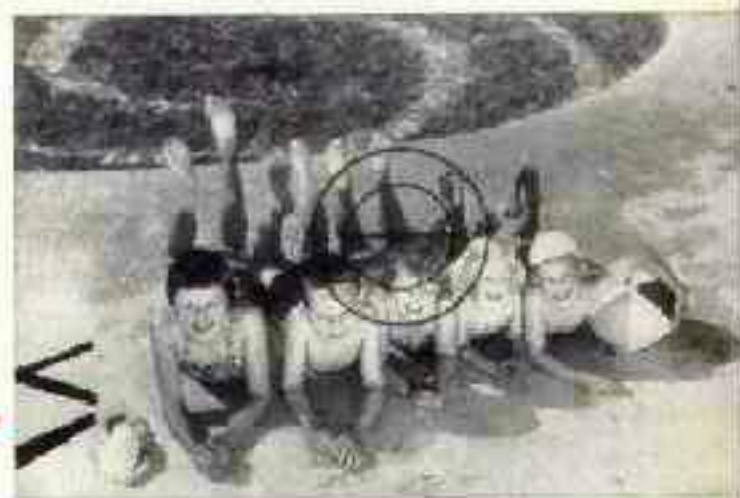
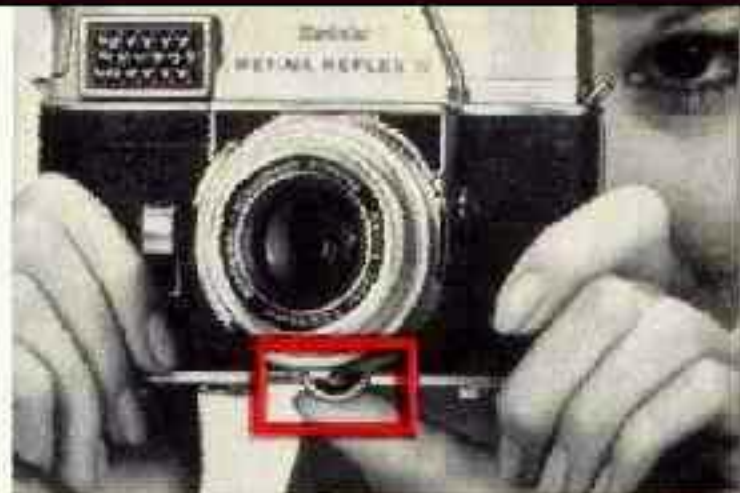
Automatic exposure control

Look through the finder eyepiece and sight the subject. If the shutter has not been cocked by means of the rapid wind lever, the finder is "blacked out" and you cannot sight the subject.

Be sure to keep your fingers clear of the cell window of the exposure meter.

While sighting the subject also turn the setting wheel until the finder needle registers exactly between the brackets. As you set the finder needle, the exposure control automatically sets the correct lens opening for the shutter speed previously set (also see page 18: An additional exposure check).

If the needle cannot be moved between the brackets, the preset shutter speed has to be changed. If no exact setting can be achieved either, take a flash picture or a time exposure.





Focusing

There are two methods of focusing the picture correctly: a) with the aid of the ground glass screen, b) by means of the split-image rangefinder.

a) by means of the ground glass screen

Frame the subject in the viewfinder and turn the lens either by means of the focusing knob (c) or the setting wheel, until the subject appears sharpest on the ground glass screen.

b) using the split-image rangefinder

The split-image rangefinder method of focusing (bright circular area in the centre of the field of view) is recommended for greatest accuracy. Select a part of the subject with some clearly-defined edge. Turn the lens until the split-image is aligned. (Note: Hold the camera horizontally for checking vertical edges and vertically for horizontal edges.)



Image out of focus



Image in focus





Horizontal or vertical pictures?

Whether you take a horizontal or a vertical picture depends upon the nature of the subject. Our two illustrations are intended as a guide for holding the camera steady for horizontal (above) and vertical pictures (below). Try a few positions to see which suits you best.

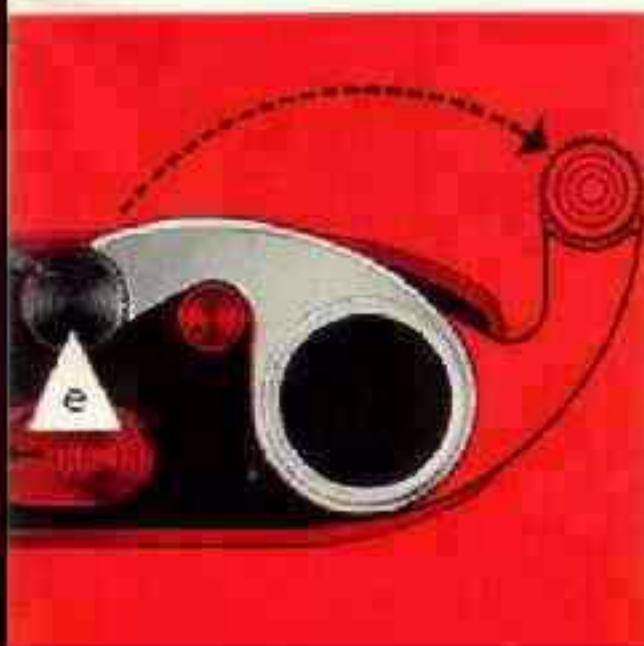
The index finger should be lightly rested on the shutter release. Care should also be taken that no part of your ever-ready case gets in front of the lens.





Releasing the shutter

With the exposure pointer centered in the brackets and the subject nicely framed in the finder, press the shutter release (d) down all the way with a slow, squeezing action. The particularly safe shutter release makes a smooth and shockless action possible.

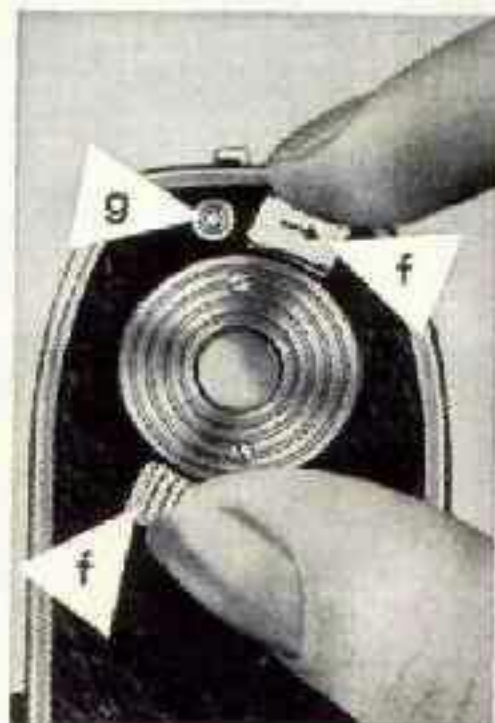


Be ready for action

It is advisable to operate the rapid wind lever (e) again immediately a picture has been taken. You will thus always be ready for action. It does not harm the shutter, if it remains cocked for even an extended period of time.

Loading (in subdued light)

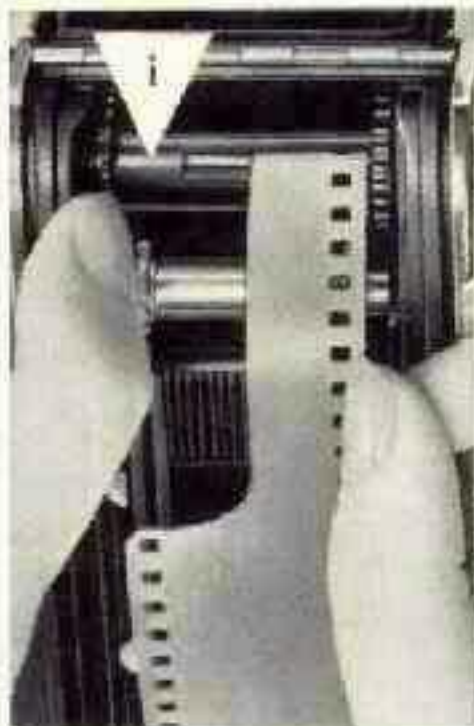
1. Press the milled lever (f) on the camera base clockwise; the opposite end of the lever then uncovers the opening button (g). Press this button and the back springs open.
2. Pull out the rewind knob (h) as far as it will go.
3. Turn the built-in take-up spool (i) by its flange until the light slit points upward. With the lower edge of the film against the lower take-up spool flange push the trimmed end of the film far enough into the slot to anchor a perforation over the small pin of the slot.
4. Pull the film over the film track and insert the cassette in the supply chamber. Push back the rewind knob to its normal position.
5. Turn the take-up spool by its flange until the teeth of the sprocket (k) engage the perforations on **both sides** of the film. Close the camera back by pressing it against the body until you hear it lock. Then turn the rewind knob in the direction of the arrow until a slight resistance is felt. This takes up the slack film inside the cassette.



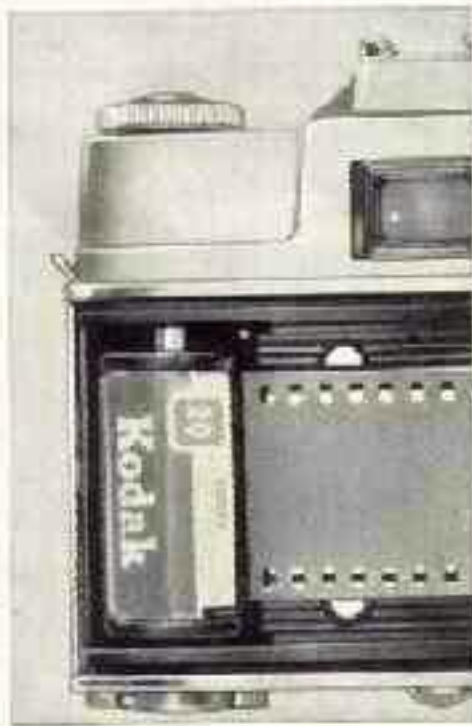
1



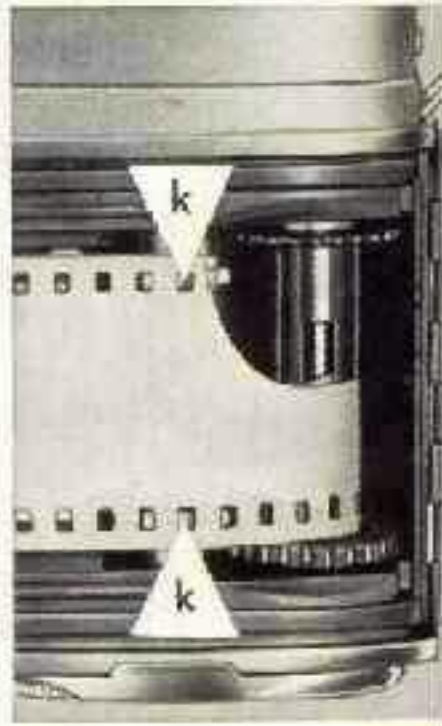
2



3



4



5



Having loaded the camera, remember to

- set the film counter
- set the film-speed index
- set the film indicator

This is how to set the film counter

The film counter operates from No. 36 back to No. 1, and it thus shows you at any time how many exposures you have left on your film.

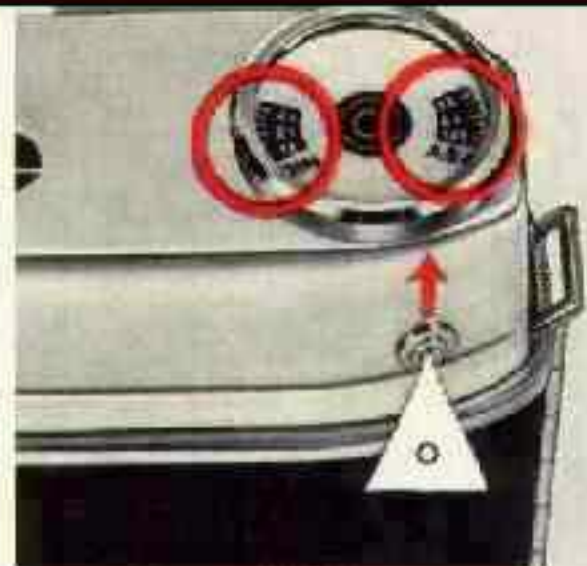
Push the film counter advance (m) in the base of the camera in the direction of the arrow as many times as necessary to bring the diamond-shaped †-mark between 36 and 1 in the center of the film counter window (n). (When using a 20-exposure cassette set the diamond †-mark at 23.) Swing the rapid wind lever now to the limit of its travel and press the exposure release. Repeat this as often as required to bring the film counter to 36 or 20, depending on the number of exposures in your cassette.

As you operate the rapid wind lever, the rewind knob should be seen turning against the direction of its arrow. This is your indication that the film is being correctly advanced.

After taking the exposure numbered "1" on the indicator, the film advance mechanism locks. Turn to page 14 for details.

Very important: the film-speed index

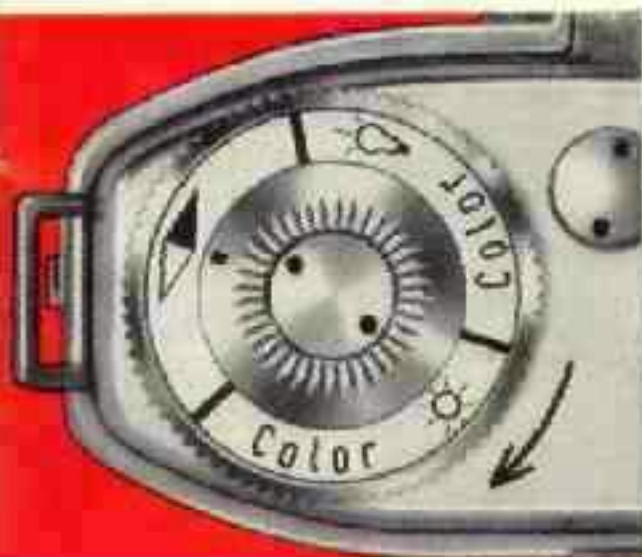
To obtain correct exposure, you **must** set the film-speed index accurately to the ASA or DIN figure given for the film loaded in your camera. Push the lock button (a) upwards and, at the same time, rotate the setting wheel underneath the shutter housing (see illustr. on page 4) until the index number of the film loaded in the camera is opposite the notch in the window marked ASA or DIN.






If the setting wheel is blocked prior to the setting of the desired film speed, release the lock button and turn back the setting wheel. The film-speed index can then be set.

The film indicator - a useful reminder

Located on top of the rewind knob is a film indicator to remind you of the type of film loaded in the camera. To set the indicator dial hold the rewind knob, press down the inner milled ring, and turn until the black dot points to the symbol for the type of film loaded in the camera.



-  = black-and-white film
- Color  = daylight colour film
- Color  = artificial light colour film

The position of the film indicator has no effect on the exposure of the film.



When your film reaches the end

If, after loading the camera with film, the film counter has been correctly set as described on page 12, the film will be finished after picture No. 1 has been taken. Before the film can be removed from the camera, it must be re-wound into its cassette.

To do this, press the clutch button (p) in the camera base and turn the rewind knob (h) in the direction of the arrow until the clutch button ceases to rotate (watch the black dot on the clutch button).

Then open the camera back **in subdued light**, pull out the rewind knob, and remove the magazine.

If you forget to set the film counter when loading the camera with film, the counter may reach No. 1 before the film is completely exposed. At No. 1, however, the film



advance is automatically locked. To release the lock, push the film counter advance once in the direction of the arrow.

You can now expose the rest of your film. But operate the lever wind **carefully** now because you do not know how many exposures you still have left. Play it safe, therefore, to avoid pulling the film end from the magazine.

If the rapid wind lever now becomes locked, this means that the film is finished. Push the film counter advance once in the direction of the arrow and the rapid wind lever will fly back to its normal position.

Experts choose Kodak films

Colour films

	ASA
Kodachrome II daylight film	25
Kodachrome II film type A	40
Kodachrome-X daylight film	64
Ektachrome-X daylight film	64
Ektachrome high-speed daylight film	160
Ektachrome high-speed film, type B	125
Kodacolor-X negative film	64

Black-and-white films

Panatomic-X	40
Plus X Pan	160
Tri-X Pan	400

Automatic depth-of-field indication

The lens reproduces sharply not only that part of the picture area on which it is actually focused but also a certain zone in front of and behind it. This is known as the range of sharpness or depth of field. It varies with the lens opening and distance settings and the focal length of the lens. To permit instant reading of the depth of field for any lens opening and distance your camera has an automatic depth-of-field indicator in the two red pointers moving on the focusing scale. **The entire range between the two red pointers will be sharp in your picture.** If, with the 50 mm standard lens for example, the distance scale is set to 10 feet and the lens aperture scale to $f/8$, the red pointers indicate a depth of field from about 7 feet to about 15 feet. Exact depth of field values are given in the table on the following page.



The lens aperture scale extends from $f/1.9$ to $f/22$. However, $f/1.9$ can only be set with 50 mm, $f/1.9$ lens. The red figure 4 is only important when interchangeable lenses are attached.

Depth of Field Table for the 50 mm Lens

Aperture (f)	Depth	Air Distance Setting in Feet												
		3'	3'6"	4'	4'6"	5'	6'	7'	8'	10'	15'	25'	50'	∞
1,9	from	2'11"	3'5"	3'11"	4'4"	4'10"	5'9"	6'8"	7'7"	9'4"	13'5"	21'2"	36'7"	135'
	to	3'1"	3'7"	4'1"	4'8"	5'2"	6'3"	7'4"	8'6"	10'9"	16'10"	30'7"	79'1"	∞
2,8	from	2'11"	3'5"	3'10"	4'4"	4'9"	5'8"	6'6"	7'5"	9'1"	12'11"	19'9"	32'6"	91'8"
	to	3'1"	3'7"	4'2"	4'8"	5'3"	6'5"	7'6"	8'9"	11'2"	17'10"	37'2"	109'	∞
4	from	2'11"	3'4"	3'9"	4'3"	4'8"	5'6"	6'4"	7'2"	8'8"	12'3"	18'1"	28'3"	64'3"
	to	3'1"	3'8"	4'3"	4'10"	5'5"	6'7"	7'10"	9'1"	11'9"	19'5"	40'7"	222'	∞
5,6	from	2'10"	3'3"	3'9"	4'2"	4'7"	5'4"	6'2"	6'10"	8'3"	11'5"	16'4"	24'1"	45'11"
	to	3'2"	3'9"	4'4"	4'11"	5'7"	6'10"	8'2"	9'7"	12'8"	22'	54'1"	∞	∞
8	from	2'9"	3'2"	3'7"	4'	4'5"	5'1"	5'10"	6'6"	7'9"	10'4"	14'2"	19'8"	32'2"
	to	3'3"	3'10"	4'6"	5'2"	5'10"	7'3"	8'10"	10'6"	14'3"	27'7"	108'	∞	∞
11	from	2'8"	3'1"	3'6"	3'10"	4'2"	4'10"	5'6"	6'1"	7'1"	9'3"	12'3"	16'1"	23'6"
	to	3'4"	4'	4'9"	5'5"	6'3"	7'11"	9'9"	11'10"	17'	40'4"	∞	∞	∞
16	from	2'7"	2'11"	3'3"	3'7"	3'11"	4'6"	5'	5'5"	6'3"	7'11"	9'11"	12'4"	16'2"
	to	3'7"	4'4"	5'2"	6'	7'	9'2"	11'11"	15'3"	25'	178'	∞	∞	∞
22	from	2'6"	2'9"	3'1"	3'4"	3'7"	4'1"	4'6"	4'11"	5'6"	6'9"	8'1"	9'7"	11'10"
	to	3'10"	4'9"	5'9"	6'11"	8'3"	11'7"	16'2"	23'2"	58'4"	∞	∞	∞	∞

* Distances are measured from the film plane.

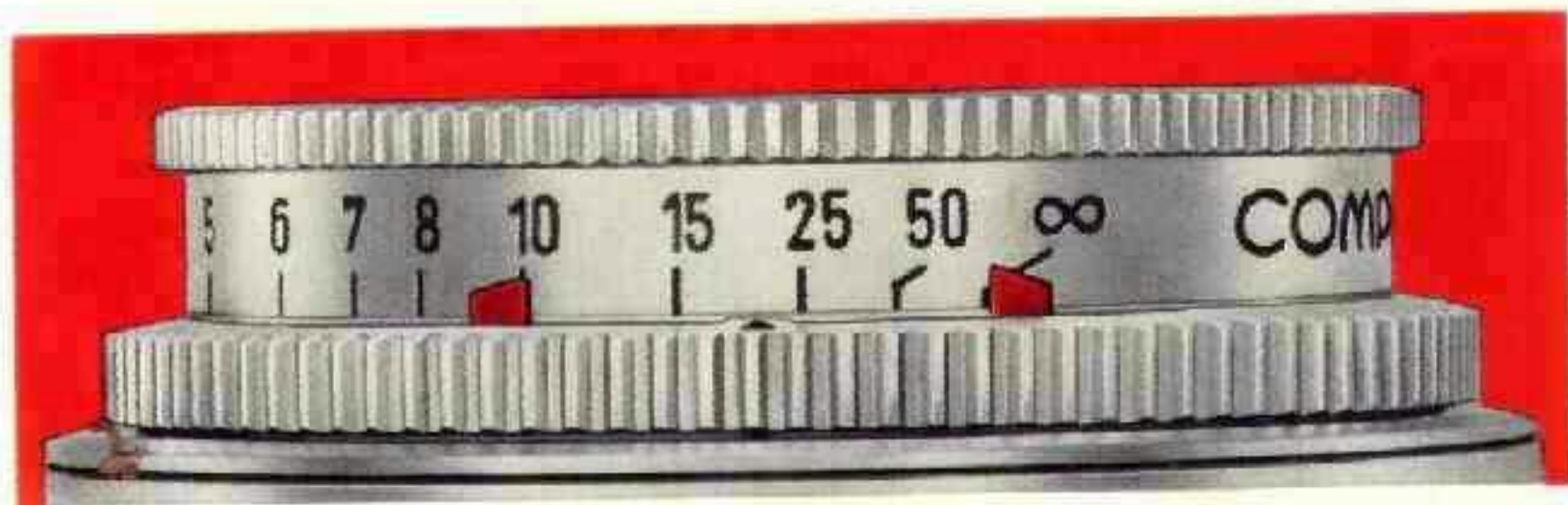
The depth of field is calculated for a circle of confusion of $\frac{1}{750}$ inch ($\frac{1}{30}$ mm).

A useful setting hint

The depth of field is an important factor and the experienced photographer will only seldom be interested in the distance setting opposite the setting index. He will rather keep an eye on the two red pointers indicating the limits of the depth of field.

In many shots a range of sharpness extending from the foreground to a far distance is desired or even indispensable. In such cases it is advisable to set the infinity symbol (∞) on the focusing scale right underneath the right-hand red pointer. The left-hand pointer will then be the near depth-of-field limit.

This setting will also prove satisfactory for snapshots.





Flash pictures

Before taking a flash picture, connect your flashgun to the flash socket (s) of your camera. Your camera is suitable for any type of flash, including electronic flash.

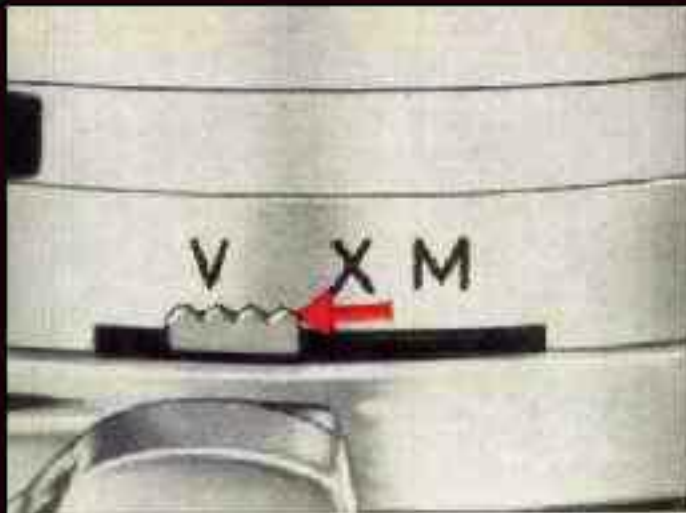
Right next to the green, serrated selector lever (t) the letters V, X and M are engraved, which signify:

The X setting is the normal synchronizer setting for flash pictures with class X and M flashbulbs (set shutter speed to $1/30$ second) and electronic flash at any speed.

The M setting is for class M flashbulbs and shutter speeds up to $1/500$ second. (Set the green selector lever to M after first depressing the lock lever [u].)

The V setting is the delayed action release or self-timer setting. Note the information on page 22.





The self-timer

If you wish to include yourself in a picture, press the lock lever (u) — see page 20 — and set the green selector lever at **V**. (It jumps back to X at once.) If the selector lever cannot be set at V, operate the rapid wind lever first.

If you now press the exposure release, the delayed action mechanism starts running down and the shutter will be released after about 10 seconds — time enough to take your place in the picture.

If you use the self-timer for flash pictures, the shutter automatically operates on X-synchronization.

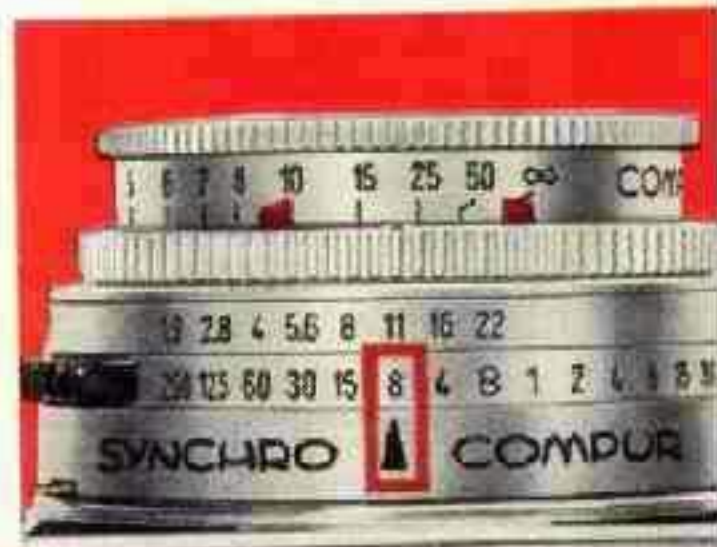
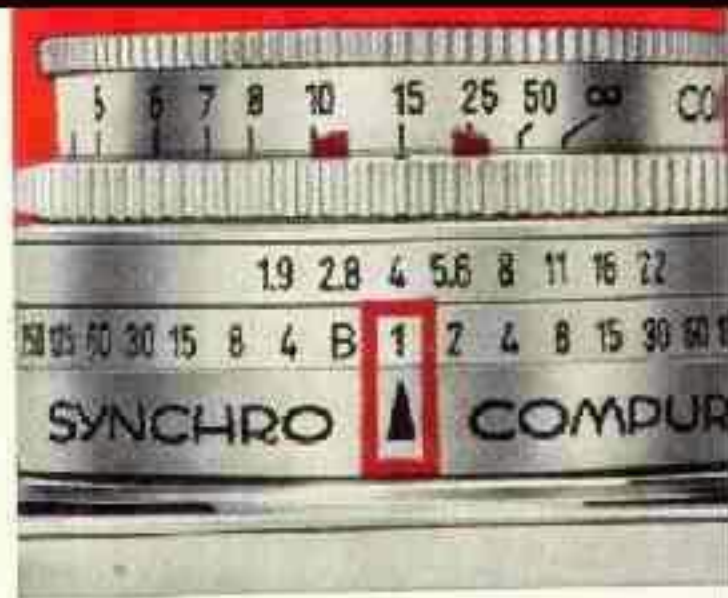
Make a habit, therefore, of operating the green selector lever only after all the other controls have been set.

The letter B and the green figures

The letter B and the scale of green numbers on the shutter speed ring are a useful aid for setting particularly long exposure times (time exposures). The scale is intended to tell you how long the exposure release must be depressed. (The letter B is in place of the missing green figure 2.)

Here is an example: With the longest automatic shutter speed of 1 second the depth of field may be inadequate. Turn the shutter speed ring by means of the two black handles until you have set the required depth of field. The green number opposite the setting index now indicates how long the exposure release has to be held down. This would be 8 seconds in our example.

To prevent camera movement, time exposures should be taken on a tripod and with a cable release, which screws into the socket below the exposure release.



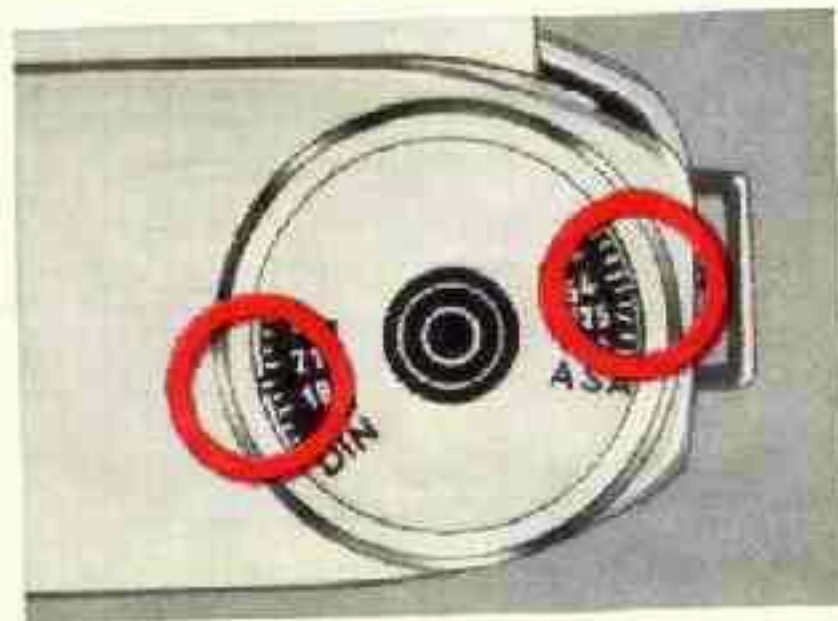
Use filters for better pictures

Filters are used for special photographic effects. For your RETINA REFLEX III a range of filters is available for both black-and-white and also colour films.

Most filters have what is called a filter factor and this is best allowed for with your RETINA REFLEX III as follows:

Kodak filters for black-and-white films	Reduce the film index setting by the following number of divisions:
Light yellow (F I), 32 mm	2
Medium yellow (F II), 32 and 60 mm	3
Yellow-green (F III), 32 and 60 mm	3
Orange (F IV), 32 mm	4
Red (F V), 32 mm	9
Blue (F VI), 32 mm	4
Ultra-violet (F VII), 32 mm	0
Polar screen, 32 mm (also suitable for colour film)	4

Kodak filters for Kodak colour films	
Skylight filter, 32 and 60 mm, for daylight film	0
Daylight filter No. 85, 85 B, 85 C, 32 and 60 mm, for artificial light film	2
Photoflood filter No. 80 B, 32 and 60 mm, for daylight film	3



Here is an example:

You want to use a yellow-green filter (F III) for a shot on black-and-white film. On the film index scale you have set 160 ASA (or 23 DIN) for Kodak Plus-X Pan film. The table on the preceding page indicates that the film index setting has to be reduced by 3 divisions (see page 13) where a yellow-green filter is used. Your new setting on the scale will thus be 80 ASA (or 20 DIN) (see illustration).

When the filter is removed again, remember also to reset the film index accordingly — back to 160 ASA (or 23 DIN) in our example.



Taking incident light readings

Incident light readings are taken of subjects with sharp contrasts in light, as when shooting against the light. To do this, first slide the white incident light mask over the cell window of the exposure meter. Now, set the exposure by means of the automatic exposure control as usual.

Changing partly exposed films

Rewind the film in the camera, until the reversing button (see page 14) ceases to rotate, then stop. Take the film out of the camera and note the number shown in the frame-counter window. When re-loading the film, first set the frame-counter as described on page 12. When 36 (or 20) is indicated **do not** release the shutter. Subtract the previously noted counter reading from 36 (or 20); this gives you the number of times you must now operate the rapid wind lever — **but with the frame-counter setting knob held firmly in the direction of the arrow**. Now operate the rapid wind lever twice more, before releasing the frame-counter setting knob. Finally, set the noted number on the frame-counter. When operating the rapid wind lever, the reversing button see that rotates. You are now ready to continue photographing.

Care of the camera

Avoid finger prints on the lens and finder windows. Use a soft sable brush or a soft and lintless cloth (do never use any cleaning fluid). Also give the film track and supply chamber an occasional brush.

Have more fun by having more lenses

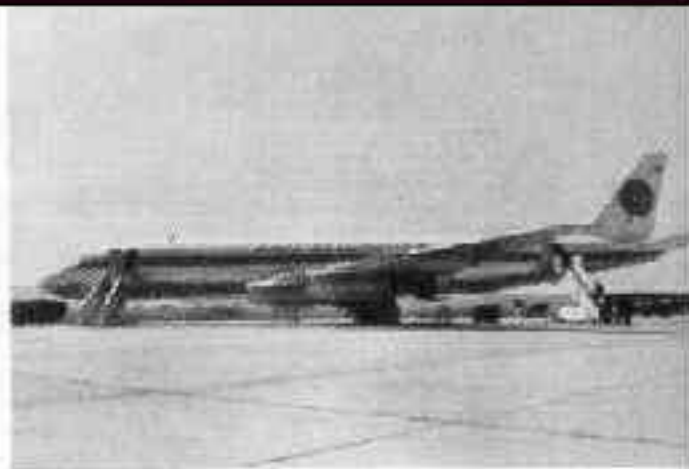


The interchangeable lenses on the following two pages are offered to extend the picture-taking scope of your RETINA REFLEX III. Use telephoto lenses for distant scenery and to bring subjects closer. Wide-angle lenses, on the other hand, cover a wider area and give greater depth of field.

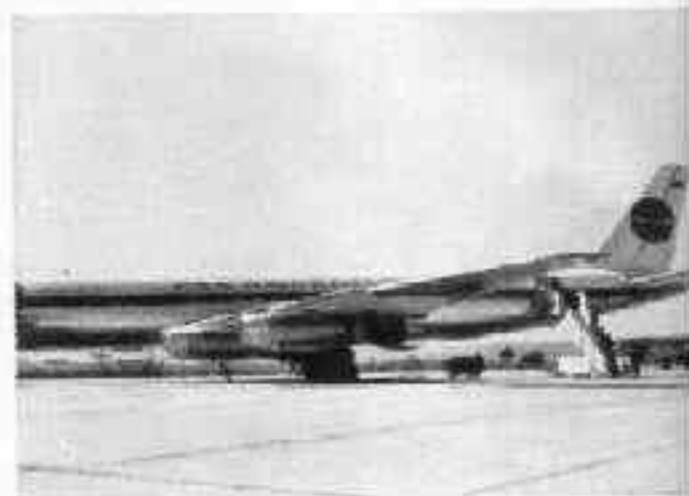
To remove a lens, just hold down the safety lock next to the setting wheel, turn the lens counterclockwise, and lift it off. To attach a lens, line up the red dot on the lens mount with the red dot on the shutter rim; insert the lens and turn it clockwise until the safety lock engages. Complete instructions are packed with every interchangeable lens.

Wide-angle lenses

RETINA Curtagon, 28 mm f/4

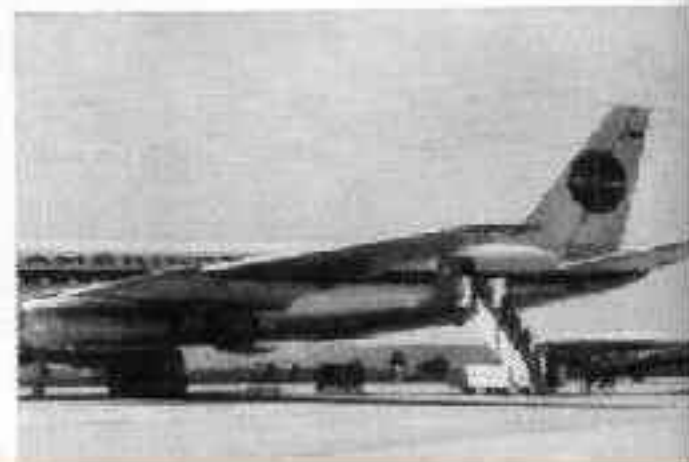


RETINA Curtagon, 35 mm f/2.8
RETINA Eurygon, 35 mm f/4



Standard lenses

RETINA Xenor 50 mm f/2.8
RETINA Xenon 50 mm f/1.9



Telephoto lenses

RETINA Tele-Arton, 85 mm $f/4$
RETINA Rotelar, 85 mm $f/4$



RETINA Tele-Xenar, 135 mm $f/4$



RETINA Tele-Xenar, 200 mm $f/4.8$
with leather case, yellow-filter,
skylight-filter and lens hood



Your accessories for the RETINA REFLEX III

Examples ►

For your RETINA REFLEX III you can use the entire range of RETINA auxiliary equipment. The **lens hood** should be part of your standard outfit. There is a practical **leather case** available to take the lens hood plus three Kodak **filters**. The leather case attaches to the carrying strap of the **ever-ready case**. For **close-ups** a number of special accessories is available to you. With the two **N close-up lenses** (also available for the 50 mm f/1.9 lens) you can approach the subject to within 12 inches. The three **R close-up lenses** (for the 50 mm f/2.8 lens only) permit near shots between about 11 and 6 inches. An extremely useful aid for close-up photography is the **table stand** which is suitable for many uses. The **close-up stand 1:1** is used in conjunction with the R 1:2 close-up lens and the 50 mm f/2.8 camera lens for taking close-ups and copying documents in natural size. For copying documents of bigger size, about 6 by 8 or even 8 by 12 inches, the **copying stand** will be found a real aid. For making photomicrographs with the RETINA REFLEX III (50 mm f/2.8 lens) Kodak offers a **Micro adapter** which fits all microscopes with an eyepiece diameter of 1 inch. The **right-angle finder** permits viewing at 90 degrees to the shooting direction. It fits, with the aid of an adapter, over the viewfinder eyepiece. **KODABLITZ**, the matchbox-size, high efficiency flashgun, with wide-angle reflector for even illumination, provides light for indoor shots and lightens outdoor shadows (for AC-type flashbulbs). Finally, there are several different **hold-all cases** for the versatile range of RETINA accessories.



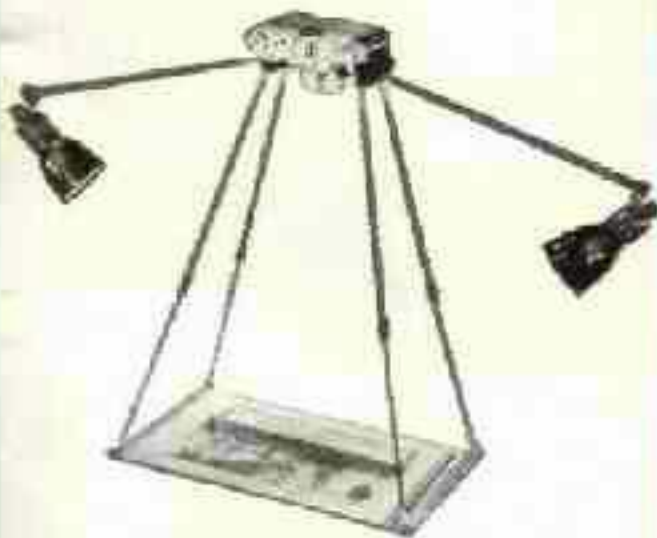
Leather case for lens hood
and filters



Table stand



Close-up stand 1:1



Copying stand



Micro adapter



Right-angle finder

Details

Lenses: 50 mm, f/2.8 RETINA Xenar or 50 mm, f/1.9 RETINA Xenon (interchangeable lenses from 28 to 200 mm focal length).

Automatic Exposure Control: Automatic exposure setting by coupled shutter and exposure meter. Exposure meter needle in brilliant ground glass viewfinder. Additional exposure check in exposure meter window in camera top.

Shutter: Synchro-compur shutter with automatic diaphragm, X-M synchronization and safety lock, built-in self-timer; rapid wind lever cocks shutter, advances film and film counter; double exposure prevention.

Focusing and Viewing: Pentaprism finder with automatic exposure control indication, parallax-free with all lenses and at all distances; full area, bright ground glass screen with split-image rangefinder.

Automatic depth-of-field indication: Two pointers automatically indicate the entire range of sharpness with any lens at any distance.

K O D A K A G - S T U T T G A R T - W A N G E N