

Kodak

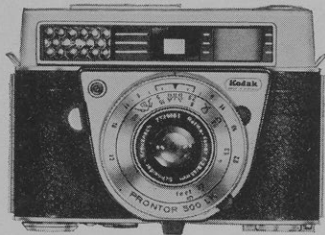
C A M E R A

RETINA

Box 1116

IF

**You
are now
the owner**



of the new RETINA I F Camera, which is designed to make picture-taking an even greater pleasure.

The new KODAK RETINA I F offers you the following exciting features:

- Signals appearing in the large bright-line finder enable the exposure to be controlled accurately.
- The famous Schneider-Kreuznach RETINA-Xenar f/2.8, 45 mm, 4-element, 3-component lens ensures brilliant photographs in colour and black-and-white.
- The new Prontor 500 LK-shutter has six shutter speeds up to $1/500$ second. This high speed enables you to take lively action pictures.
- PLUS the special feature of this camera: a built-in transistor-flashgun.

With your new RETINA I F you are always ready to take pictures — outdoors by daylight or indoors by flash.

The famous RETINA precision and the accumulated experience of more than 25 years successful camera production and research are the best guarantee of the quality of your new RETINA I F Camera.

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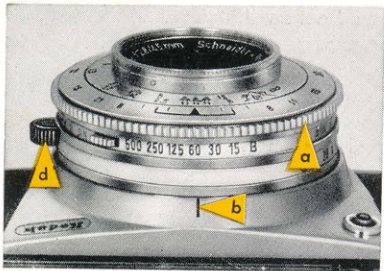
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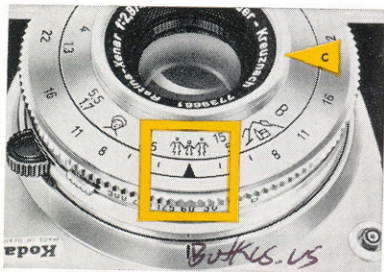
Before taking any important pictures, expose a roll of film (include a few flash shots) and examine the results. This will give you practice in camera operation and provide a check on your equipment.






For people in a hurry

Select the shutter speed

Rotate the shutter speed ring (a) until the required shutter speed is opposite the setting mark (b).

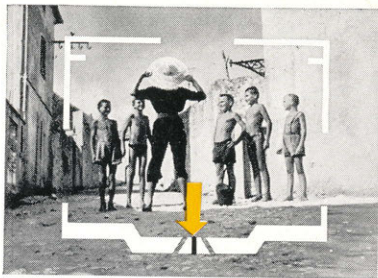


Set the distance

Rotate the front ring (c) of the lens, until the symbol for the distance range you want "clicks" into position against the setting mark:  = near range,  = middle range,  = far range.

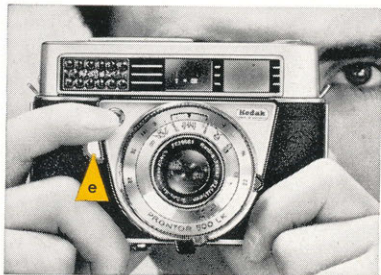
Set the exposure control

Look through the finder and rotate the aperture ring (d) until the exposure control pointer is positioned in the middle of the Δ -index.



Release the shutter

Frame the subject in the bright-line finder and, to take the picture, depress the shutter release (e) slowly all the way down. Operate the rapid-wind lever on the camera base. You are now ready to take another picture.



Read on for the more comprehensive information

KODAK Colour Films

KODACHROME II Film — The film for brilliant high definition colour slides (and also colour prints). Processing is included in the price of the film and slides are returned mounted ready for projection. There are two types of KODACHROME II film:

- **KODACHROME II Film** for daylight (ASA 25) — for use in daylight, with electronic flash or with blue flashbulbs (20 and 36 exposure cassettes available).
- **KODACHROME II Film, Type A (ASA 40)** — for photoflood light (20 exposure cassettes).

Experts Choose KODAK Film

KODACHROME-X Film (ASA 64) — A new, faster version of the world-famous colour film. For daylight, electronic flash or blue flashbulbs (20 and 36 exposures).

EKTACHROME-X Film (ASA 64) — A fast colour slide film which can be processed by the user. For daylight, electronic flash or blue bulbs (20 and 36 exposures).

High-Speed EKTACHROME Film — For colour slides in poor lighting conditions or for high-speed action (20 exposure film). Can be processed by user. Daylight Type ASA 160 and Type B ASA 125 for tungsten light.

● **High-Speed EKTACHROME Film, Daylight Type (ASA 160)** — for daylight, electronic flash or blue flashbulbs.

● **High-Speed EKTACHROME Film, Type B (ASA 125)** — for tungsten light.

KODACOLOR-X Film (ASA 64) — A fast colour negative film which gives sparkling colour prints for use in daylight or with clear flashbulbs (20 exposures).

KODAK Black-and-White Film

KODAK PANATOMIC-X Film (40 ASA)
a fine-grain film, capable of a high degree of enlargement (36 exposures).

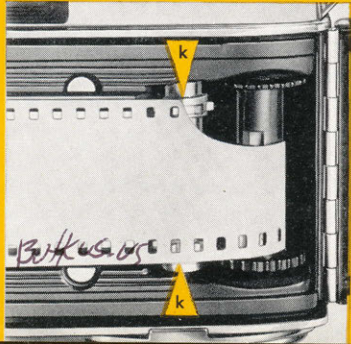
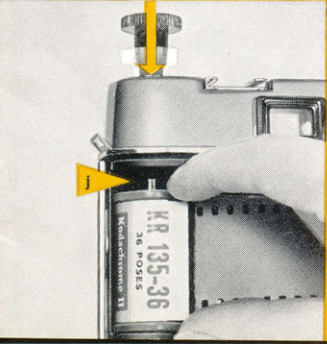
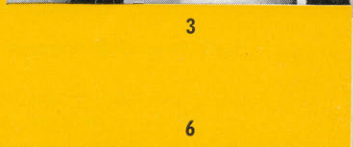
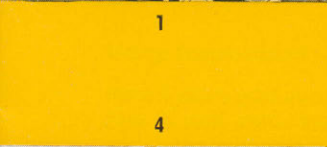
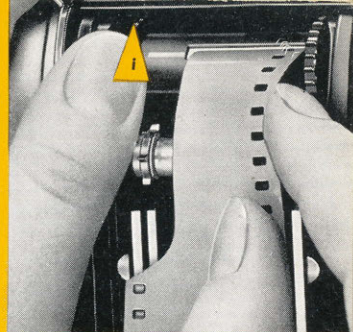
KODAK PLUS-X PAN Film (160 ASA)
a fast fine-grain film of great exposure latitude (36 exposures).

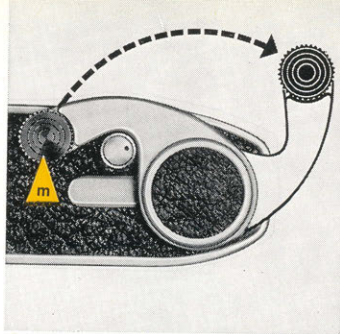
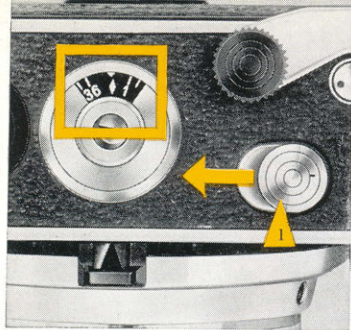
KODAK TRI-X PAN Film (400 ASA)
a high-speed film for action photography with fast shutter speeds or for use in poor lighting conditions (36 exposures).

Note: Detailed instructions containing further exposure recommendations are packed with all KODAK films.

Loading the film — always in subdued light

- 1.** Turn the safety lock (f) on the camera base in the direction of the arrow. Press the opening button (g) and the camera back will spring open.
- 2.** Depress the rewind knob (h) slightly and turn it against the direction of the arrow. It will then spring up; pull it out as far as it will go.
- 3.** Turn the built-in take-up spool (i) until the light-coloured slot faces upwards. Insert the end of the film into the slot in the take-up spool so that the tooth projecting from one side of the slot engages one of the perforations of the film.
- 4.** Pull the cassette over the film track and drop it into the film chamber (j). Then push the rewind knob fully down and lock it by turning in the direction of the arrow. When tensioning the film (see 6) raise the rewind knob again.
- 5.** Turn the take-up spool until the teeth of the sprocket (k) engage the perforations on **both sides** of the film.
- 6.** Then turn the rewind knob (h) in the direction of the arrow until a slight resistance is felt. This takes up the slack film inside the cassette. Push the rewind knob down as far as it will go and lock it by giving it a slight turn in the direction of the arrow. Close the camera back by pressing it against the camera body until you hear it lock.

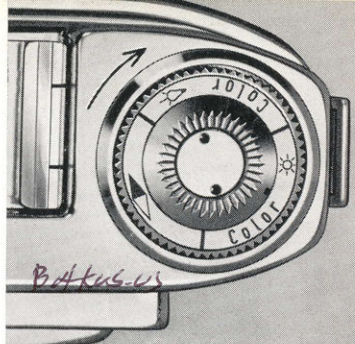
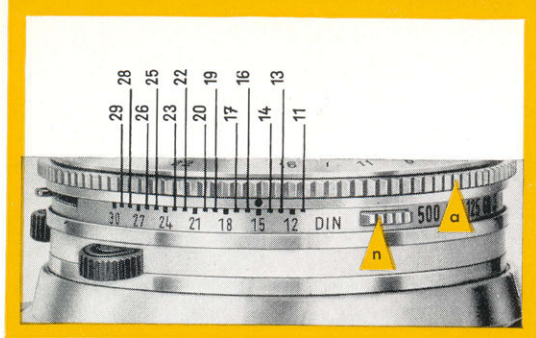




Setting the frame counter

After loading the film, be sure to set the frame counter. This will tell you how many frames are left still unexposed on your film (the frame counter counts backwards from 36 or 20 to 1). Push the frame counter setting knob (1) on the base of the camera several times in the direction of the arrow until the setting mark between 36 and 1 is in the middle of the frame counter window (with 20 exp. cassettes, use the setting mark at No. 23). Now operate the rapid-wind lever to the limit of its travel. Fire the shutter and repeat this sequence of operations until the figure 36 (20 with 20 exp. cassettes) is in the middle of the frame counter window.

When operating the rapid-wind lever, make sure that the rewind knob is rotating against the direction of the arrow. This tells you that the film is winding correctly.



Very important – the film speed

For correct exposure you must set the film speed correctly. Set the film speed on the red DIN or ASA scale. Press the locking button (n) and turn the shutter ring (a) until the red dot is against the required speed value. (The ASA-scale is on the opposite side of the shutter ring).

The film indicator – a useful memory aid!

To set the film indicator, turn the rewind knob against the direction of the arrow and let it spring up (but don't pull it right up), hold it firmly and turn the inner knurled ring until the black dot is opposite the appropriate symbol.

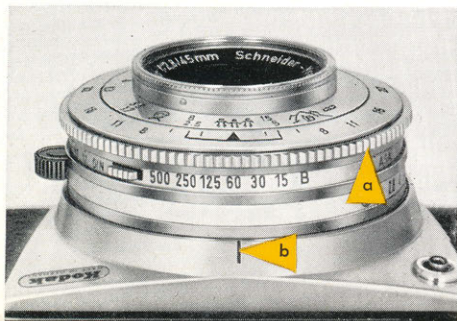
◀ = Black and white film Color ☀ = Daylight colour film Color ☾ = Artificial colour film

Selecting the shutter speed

Rotate the shutter ring (a) until the desired shutter speed setting "clicks" into place opposite the setting mark (b).

The black numbers on the shutter ring denote fractions of a second: 15 = $1/15$ sec, 30 = $1/30$ sec, 60 = $1/60$ sec, 125 = $1/125$ sec, 250 = $1/250$ sec, 500 = $1/500$ sec. (The letter B is the shutter setting for time exposures. For further details see page 24).

In daylight $1/60$ sec or $1/125$ sec are normally used, and these are adequate for most subjects. For fast-moving subjects, e. g. sports photographs, use a faster shutter speed i. e. $1/250$ or $1/500$ sec.



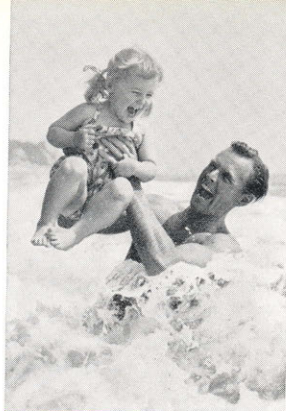
Note: the resistance between $1/30$ and $1/15$ sec serves as a warning that for photographs taken at $1/15$ or B, the camera should be mounted on a tripod to avoid camera shake.

Examples of the correct choice of shutter speed



$1/60 - 1/125$ second

250 125 60 30 15



$1/125 - 1/250$ second

500 250 125 60 30



$1/250 - 1/500$ second

500 250 125



Focusing

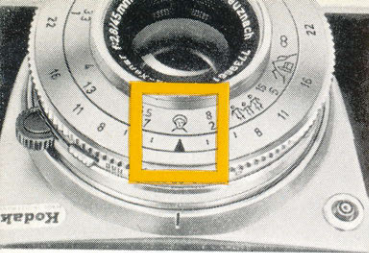
The rapid focusing device is a great advantage, especially when taking action pictures. With the new RETINA I F, you can choose from three rapid focusing settings, near, middle and far ranges which are indicated on the distance scale by symbols and click stops.



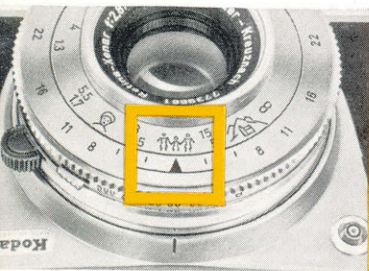
Near range
Middle range
Far range

Rotate the focusing ring (c) until the symbol for the desired distance range clicks into position opposite the setting mark ▲.

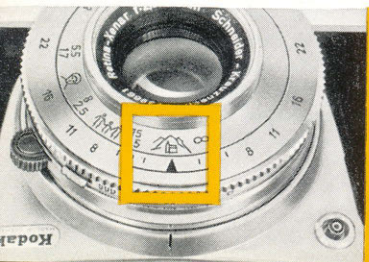
If you wish, you can set the distance more accurately by using the figures on the distance scale. (The black figures on the distance scale represent metres, the red figures represent feet).



Near range

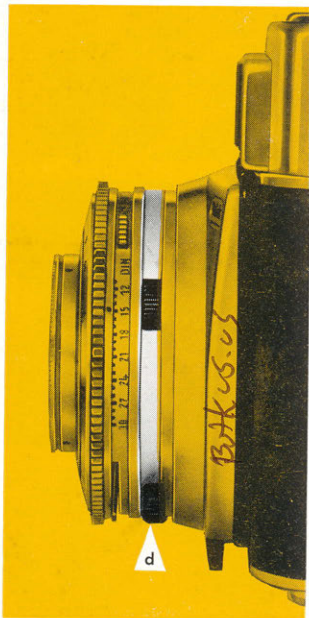


Middle range



Far range





Exposure control setting

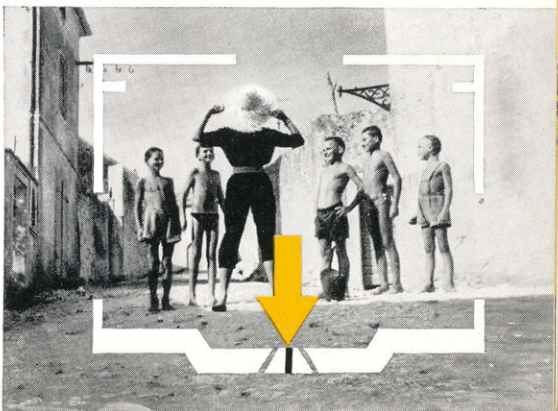
Look through the viewfinder window and rotate the aperture ring (d) by both grips, until the pointer is in the middle of the Δ -index. The camera is now set for correct exposure. If, when setting the pointer, the aperture ring reaches a point where it will rotate no further, alter the shutter speed setting until an exact setting in the viewfinder is possible. (Do not set the shutter to B, as at B, the exposure control does not operate).

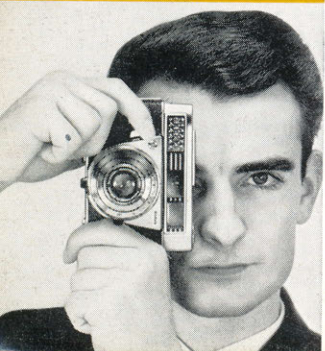
Under extreme lighting conditions, the Δ -index may become covered. This tells you that the selected shutter speed setting would give an incorrect exposure. If, however, you still wish to take the photograph, you can give a time exposure or use flash (see page 22).

**needle not in centre =
exposure setting not correct**



**needle in the centre of the index =
exposure setting correct**





Holding the camera

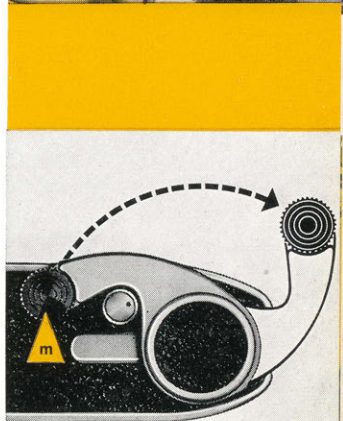
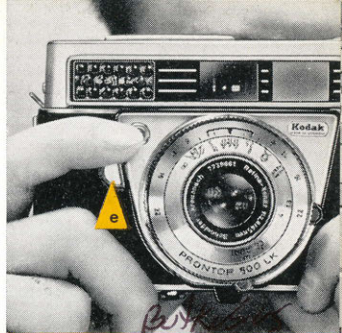
Whether you take a horizontal or a vertical picture depends upon the nature of the subject. The two illustrations are intended as a guide for holding the camera steady for horizontal (above) and vertical pictures (below). Try a few positions to see which suits you best.

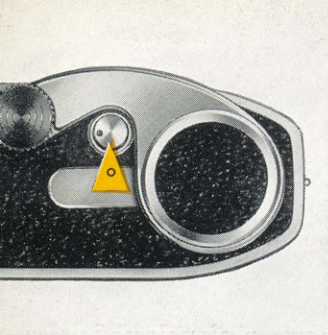
The index finger should be rested lightly on the shutter release. Care should be taken that no part of the ever-ready case gets in front of the lens. Also, make sure that you do not obscure the exposure meter window with your fingers.

Viewing and releasing

The brilliant frame in the finder of your camera shows you the exact picture area and makes viewing easier for you. When viewing, take care to keep your fingers clear of the honeycomb window of the exposure meter. After making sure that the exposure control needle is centred within the Δ mark, slowly depress the shutter release (e).

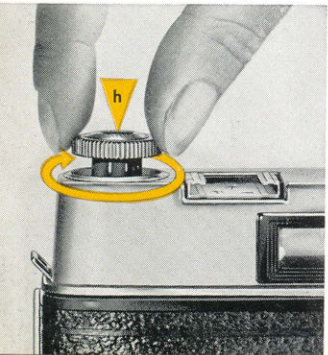
After taking a picture, operate the winding lever (m) as far as it will go. You are then ready for the next exposure.





Unloading the film — in subdued light

When you have taken the last exposure ("1" in the frame counter), the film advance mechanism will lock. The film must now be rewound into the cassette. To do this, first allow the rewind knob to spring up (**do not pull it up**). Then press the reversing button (o) in the base of the camera and at the same time turn the rewind knob (h) in the direction of the arrow until the reversing button ceases to rotate. You can watch this button turning by observing the black dot near its rim. Now open the camera and remove the cassette.



If the frame-counter has not been set correctly, the film transport lock may operate too soon. If this happens, push the frame-counter setting knob once to the left. Then operate the rapid-wind lever carefully, so as not to risk tearing the film out of the cassette. If it cannot be operated to the limit of its travel, then you have come to the end of the film. The rapid-wind lever will spring back into position if the frame-counter setting knob is pushed once to the left.

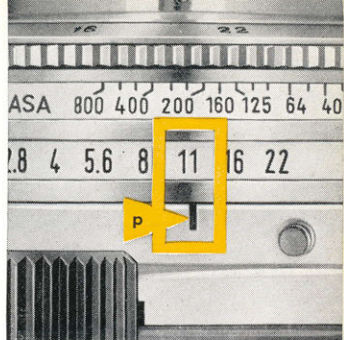
Depth of field

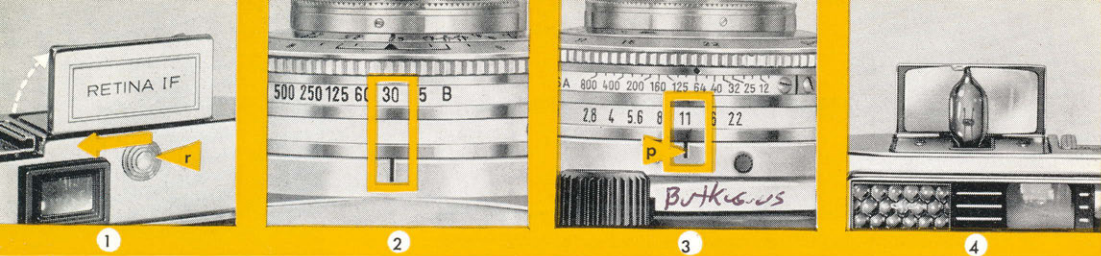
The depth of field varies according to the aperture and the distance set. A high aperture number (e. g. 22) yields great depth of field, a low aperture number (e. g. 2.8) yields little depth. The depth of field at any distance and aperture can be read from the depth-of-field scale (q) on the shutter mount, aperture opposite the black dot (p).

Example: The camera is set for the medium zone and f/11 has been chosen. Then, on the depth-of-field scale, 5½ feet will coincide with the number 11 on the left and nearly ∞ with the number 11 on the right. Therefore, everything between 5½ feet and ∞ will appear sharp in the picture.

On the depth-of-field scale (q), the zone of sharp focus for f/4 is shown by the black indicating line. The two dots inside this line show the depth-of-field limits for f/2.8 and the dots outside this line show those for f/5.6.

You will find complete depth-of-field tables on p. 31.





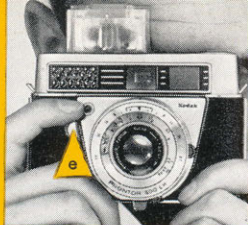
Flash pictures

(The battery is already in position).

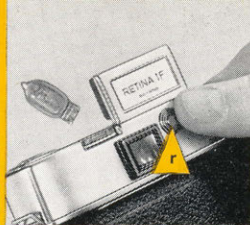
1. Push the knob (r) in the direction of the arrow — the flashgun will pop up.
2. Rotate the shutter ring to $1/30$ sec and set the required distance against the setting mark.
3. From the flash-table read off the aperture, e. g. f/11, and set it at the index (p).
4. Use AG-1 flashbulbs (blue flashbulbs for daylight type reversal colour film, clear flashbulbs for black-and-white and negativ colour film). Rock the bulb gently backwards and forward to remove any chemical deposit from the contacts.
5. The plastic flashguard supplied with the camera should be used when taking flash pictures. Simply slide it over the reflector with the open side pointing to the rear. This is especially important when taking close-ups and groups.



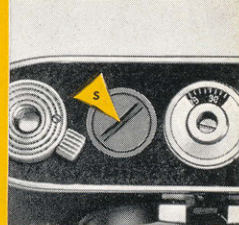
5



6



7



8

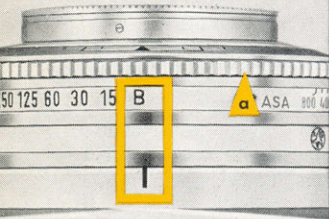
6. Depress the shutter release (e) slowly — the bulb will fire automatically. (Do not put the camera away with a bulb in place. If you do, the battery will run down.)
7. To eject the bulb after firing, take off the plastic shield, point the camera downwards and push the knob (r) towards the eyepiece of the viewfinder, in the direction of the arrow; the used bulb will then fall out. Do not touch flashbulbs immediately after firing — they will be extremely hot.
8. The life of the Mallory PX 625 battery supplied is approximately two years. To change the battery, place a coin in the slot (s) and turn it anti-clockwise. (The cover of the battery chamber can be easily removed by pushing the nearby safety catch to the side). **When fitting the new battery make sure that positive side (marked +) is to the inside.** Then close the chamber.

Note: When using an accessory flashgun, attach its cable to the socket on the front plate of the camera. The built-in flashgun is in these circumstances disconnected.



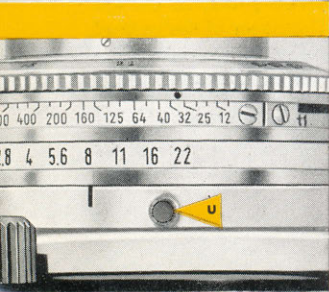
Delayed action shots

If you wish to include yourself in the picture, push the small lever (t) sideways as far as it will go. You must set this lever only after operating the rapid-wind lever. If you now press the shutter release, the delayed action mechanism starts running down and the shutter will be released after a delay of about 10 seconds. You may also make flash pictures with the delayed action release. Once you have set the delayed action mechanism, you must make that particular exposure with it.



Time exposures

Turn the shutter speed setting ring (a) until the letter "B" coincides with the setting mark. At this setting you may keep the shutter open as long as you like by keeping the shutter release depressed. When the camera is set to "B" the exposure control mechanism is inoperative. Delayed action exposure cannot be made at this setting. To prevent camera movement, time exposures should only be taken with the camera mounted on a tripod or other firm support. Always use a cable release for time exposures. It screws into the socket (u).

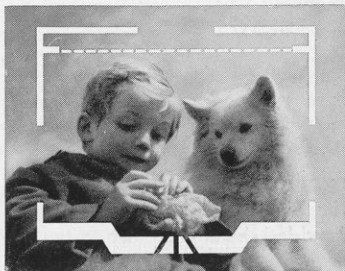


Changing partly exposed films

Rewind the film in the camera, until the reversing button (see page 20) ceases to rotate, then stop. Take the film out of the camera and note number shown in the frame-counter window. When re-loading the film, first set the frame-counter as described on page 10. 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 taking pictures.

Photographs at less than 8¹/₂ feet

At distances between 3¹/₄ ft and 8¹/₂ ft, it becomes necessary to compensate for parallax. For that purpose, take an imaginary line between the two opposite marks near the top of the bright-frame. Take this line to be the upper limit of the desired field of view, otherwise you may "cut off" some of the picture.



Tips for using the exposure control system

The exposure control system of your RETINA I F is balanced for subjects of average brightness range. Under conditions other than these, the following tips will help you to obtain correct exposures:

When taking pictures of scenes with excessive brightness range or where the colour contrast is high (e. g. people on the beach), you must expose for the main subject of your picture. To do this, approach your subject so that it fills the field of view and then set the exposure control system. This ensures correct exposure for the subject of your picture. With pictures "against the light" it is advisable to expose for the shadows.

For scenes which contain large expanses of strongly-lit snow, the exposure control system used conventionally would give under-exposure for detail in people, trees or animals in the foreground. To obtain correct exposure, point the camera towards the clear blue sky while setting the exposure control system.

The evening atmosphere of sunset pictures is often improved by slight under-exposure. Provided the sun is close to the horizon, point the camera towards it and set the exposure control system.

Using filters

Your RETINA I F takes all KODAK Filters, size 32 mm diameter. Information on the use of the various filters available may be obtained from your Kodak dealer. Most filters have what is called a filter factor. This is a factor by which the exposure must be increased to compensate for the light absorbed by the filter. With the RETINA I F, this is best allowed for by reducing the ASA film speed setting as follows:

Reduce the film speed setting by the following number of divisions *)

KODAK filters for black-and-white films

Light yellow (F I)	1/2
Medium yellow (F II), yellow-green (F III)	1
Orange (F IV)	1 1/2
Red (F V)	3
Blue (F VI)	1

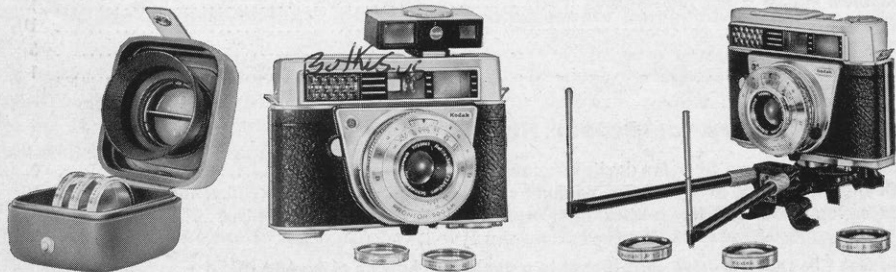
KODAK filters for Colour films

Skylight Filter (haze filter for daylight colour film)	0
Daylight Filters 85, 85 B, 85 C (for daylight exposures with artificial-light colour films)	1/2
Photoflood Filter 80 B (for artificial-light exposures with daylight colour films)	1

*) One film speed division corresponds to a doubling or halving of the ASA speed, e. g. from 25 to 50 ASA.

The lens hood prevents flare when shooting against the light, and also protects the lens from rain and snow. A leather case is available which will accommodate three filters in addition to your lens hood.

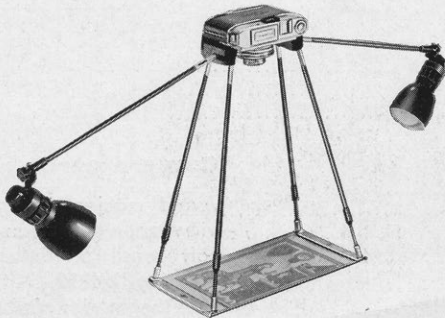
Close-up at less than 38 in. are a fascinating field of photography. The close-up lenses N I and N II (left) will enable you to take pictures between 38 in. and 12 in. For even closer work, use the close-up attachment (right) with the three "R" lenses (11 in. to 7 in.) and the intermediate ring.



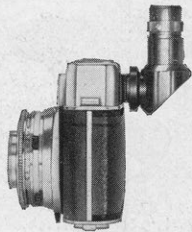
The Table Stand is particularly useful for close-ups of subjects which require long exposure times. The ball-and-socket head allows the camera to be positioned at any desired angle.



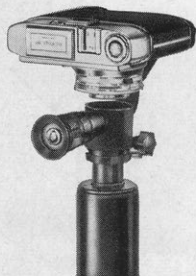
The Copying Stand is ideal for rapid copying of documents. The originals can be about 6x8 inches or nearly 8x12 inches in size. A lighting unit is available as an accessory.



The Right-Angle Finder permits viewing at 90 degrees to the shooting direction. It fits, with the lid of an adapter, over the viewing eyepiece.



The micro-adapter is an invaluable accessory in scientific work. It fits all microscopes with a 25 mm eyepiece draw tube.



Correction lenses for spectacle wearers

For spectacle wearers who do not wish to wear their spectacles while taking photographs, various correction lenses are available. The lens is attached to the eyepiece of the viewfinder by means of an adapter. When ordering these lenses, please state exact dioptré values (+ or -).




There are no correction lenses to compensate for astigmatism.

Camera care

Avoid making fingerprints on the lens or viewfinder. To clean glass surfaces, use a soft brush or lintless cloth (do not use cleaning liquids).

Dust the interior of your camera occasionally.

Depth of Field Table for RETINA I F Camera

Aper- ture	Depth	At Distance Setting in feet								
		3.3 ft.	4 ft.	5.5 ft.		8'ft.		15 ft.		Int. ∞
2.8	from	3'2"	3'6"	4'10"	5'7"	7'	9'	12'	20'1"	52'
	to	3'4"	4'2"	5'11"	7'5"	9'6"	14'	24'7"	82'	∞
4	from	3'1"	3'5"	4'7"	5'6"	6'5"	8'3"	11'2"	15'	33'
	to	3'5"	4'10"	6'2"	8'	10'7"	15'2"	31'2"	∞	∞
5.6	from	3'	3'4"	4'5"	5'3"	6'	7'5"	9'8"	14'5"	25'
	to	3'7"	5'	6'9"	8'7"	12'	18'6"	47'7"	∞	∞
8	from	2'11"	3'3"	4'2"	4'8"	5'6"	6'7"	8'	11'	15'
	to	3'11"	5'3"	7'10"	10'2"	14'11"	28'4"	∞	∞	∞
11	from	2'10"	3'2"	3'10"	4'4"	5'	5'11"	7'	9'10"	12'
	to	4'2"	5'7"	10'	12'11"	23'1"	98'	∞	∞	∞
16	from	2'9"	3'	3'4"	3'9"	4'3"	5'	5'6"	6'10"	8'6"
	to	5'	6'7"	13'10"	28'	113'	∞	∞	∞	∞
22	from	2'8"	2'10"	3'1"	3'4"	3'7"	4'1"	4'7"	5'	6'1"
	to	6'5"	10'8"	50'	∞	∞	∞	∞	∞	∞

Distances are measured from the film plane.

Depth of field is calculated for a circle of confusion of $1/500''$.

Technical Data

Lens: Fast RETINA-Xenar f/2.8, 45 mm 4-element colour-corrected lens made by Schneider-Kreuznach.

Exposure setting: Exposure control in the large bright-line finder.

Focusing: Rapid focusing by symbols for near, middle and far distances, and by click-stops on the distance scale. Depth-of-field scale.

Shutter: Prontor 500 LK-shutter from $1/15$ second to $1/500$ second, delayed action, fast-wind, double-exposure prevention.

Flash synchronization: Built-in transistor-flashgun for AG-1 bulbs.

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