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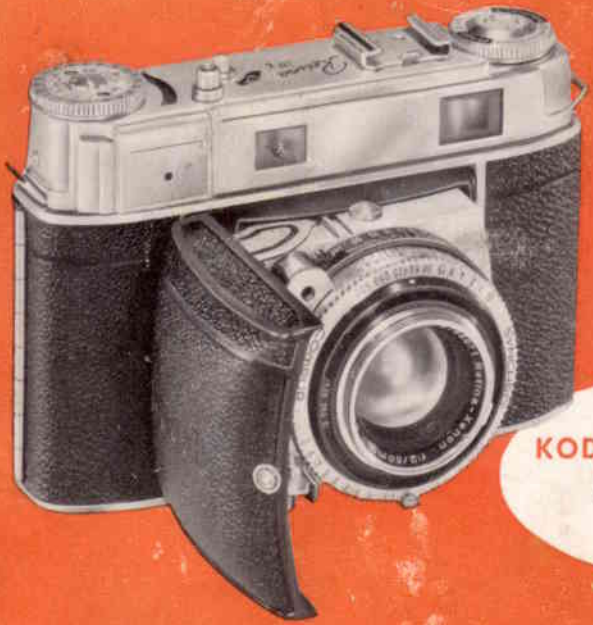


KODAK Retina IIIc Camera

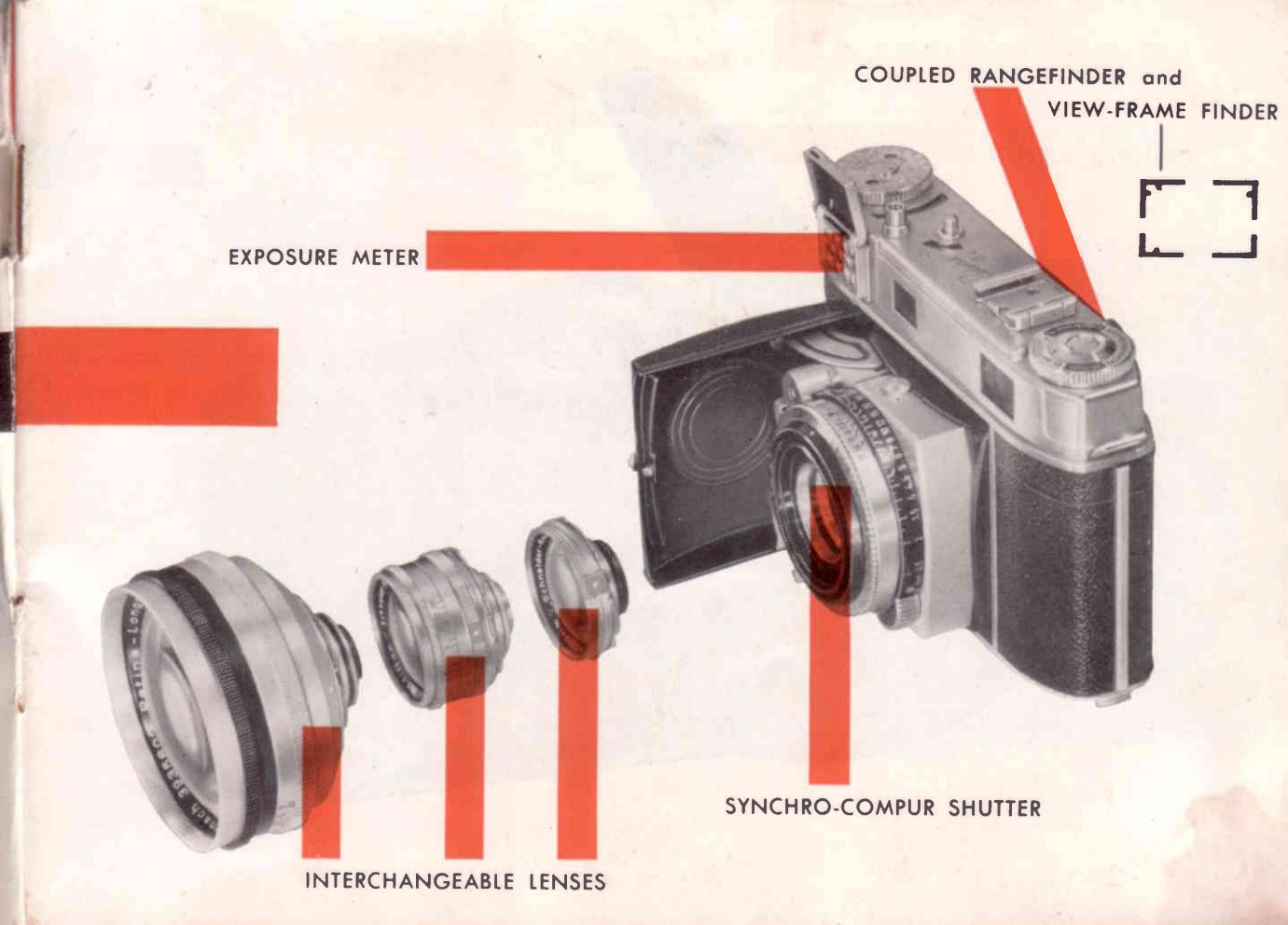
KODAK RETINA IIIc CAMERA

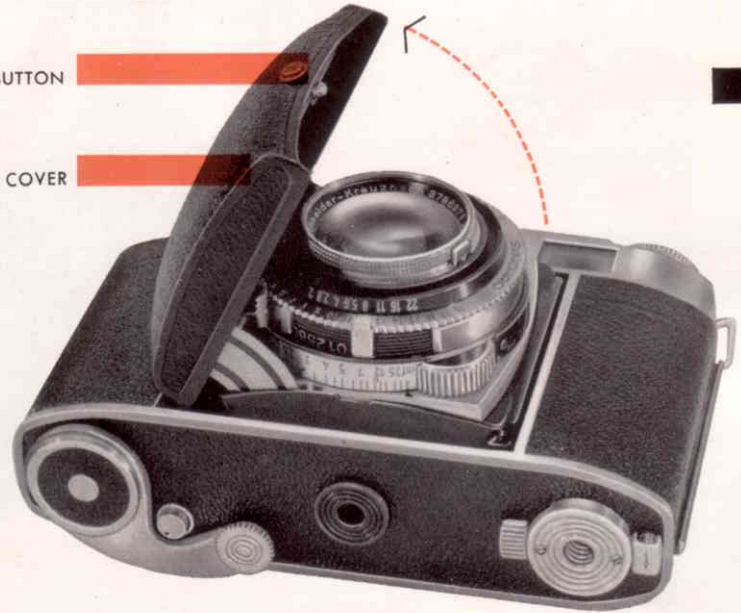
• You have purchased a truly fine camera. Utmost precision is combined with unsurpassed performance; the Retina tradition of quality and versatility is carried to new photographic heights.

The Retina IIIc Camera features — auxiliary interchangeable lenses—a coupled rangefinder combined with luminous "view-frame" finder — a built-in exposure meter—the Synchro-Compur shutter with light value settings—and full flash synchronization—plus many other refinements that set a new standard for photography.

Before an important picture assignment, a trip, or any special event, shoot a roll or two of film and make a few flash pictures. This will give you practice and provide a check on your equipment.

Read the first section of these instructions (pages 3 to 13) carefully and practice the operations described without film in the camera—the controls work equally well with or without film. When you are familiar with this basic operation, then load your camera with film and take your first pictures; the sections which follow will give you further important information for successful pictures.


COUPLED RANGEFINDER and
VIEW-FRAME FINDER
EXPOSURE METER
SYNCHRO-COMPUR SHUTTER
INTERCHANGEABLE LENSES

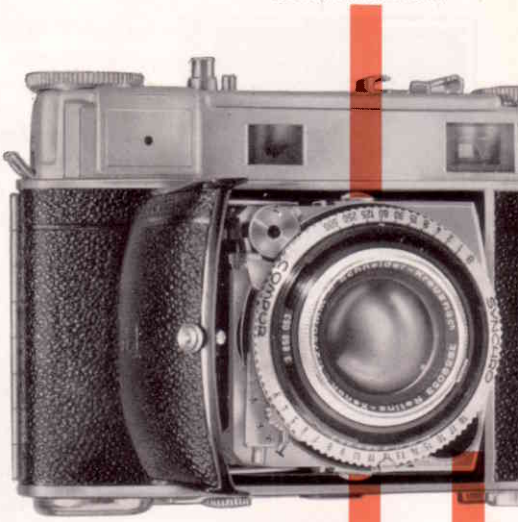


opening

Hold the camera in your hand and press the OPENING BUTTON toward the word "Kodak;" at the same time pull open the protective COVER carefully until the shutter panel locks in position.

closing

Move the FOCUSING KNOB down as far as it will go to set the focusing scale to "inf." The closing buttons cannot be depressed until this is done. Simultaneously press the two CLOSING BUTTONS on each side of the shutter panel; then close the cover.



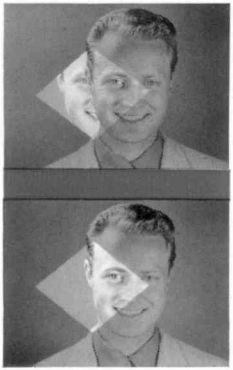
sighting the camera

CLOSE-UPS: Dotted lines show what will appear in final picture relative to what is seen in finder.

Grip the camera with both hands and look through the eyepiece. To sight the pictures properly, hold the camera at that distance from the eye which allows you to frame the subject within the luminous view-frame. When the camera is held either horizontally or vertically, note the two pointers, one on each side near the top of the view-frame. With close-up subjects from 2½ to 6 feet, the subject must be seen within imaginary lines, drawn between each set of pointers, and the opposite sides of the view-frame.

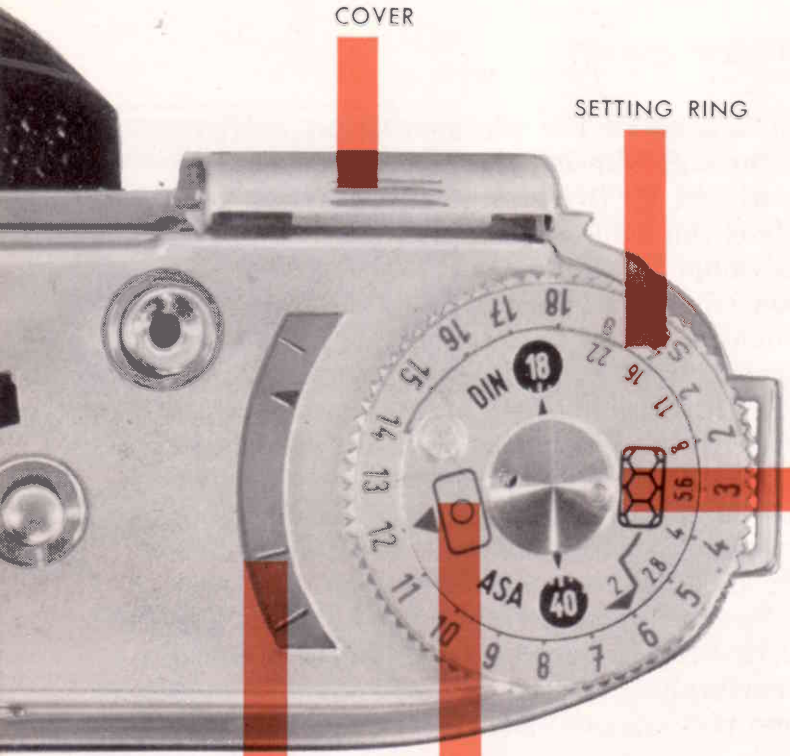
The illustrations at the right, showing the positions for horizontal and vertical pictures, are intended as a guide for holding the camera steady; other positions, of course, are possible. Try a few positions to see which is best.

focusing

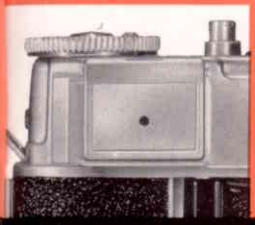


Hold the camera in the picture-taking position and look through the eyepiece. You will see the subject outlined by the luminous view-frame. In the center of the field of view you will also notice a diamond-shaped rangefinder field. Until the camera is focused for the correct distance, this field shows a double image of the subject. To set the distance correctly turn the focusing knob (shown on page 3) until the outlines of the double image move together and coincide, so that only one image is visible. The lens is now accurately set for the film plane*-to-subject distance. Practice focusing in this way with various subjects at different distances—close the camera now and then, and pretend that you have just noticed a good subject and want to focus the camera on it. Open the camera and focus quickly. Practice with the camera held in both the vertical and horizontal positions.

*The film plane location corresponds to the rear top edge of the camera.



◀ Setting Exposure Index in ASA window is described on page 20.



Generally, the exposure meter COVER will be down in bright light so that the meter is affected only by light entering through the small hole in the cover. In poorer light, the cover will be open, uncovering the honeycomb cells.

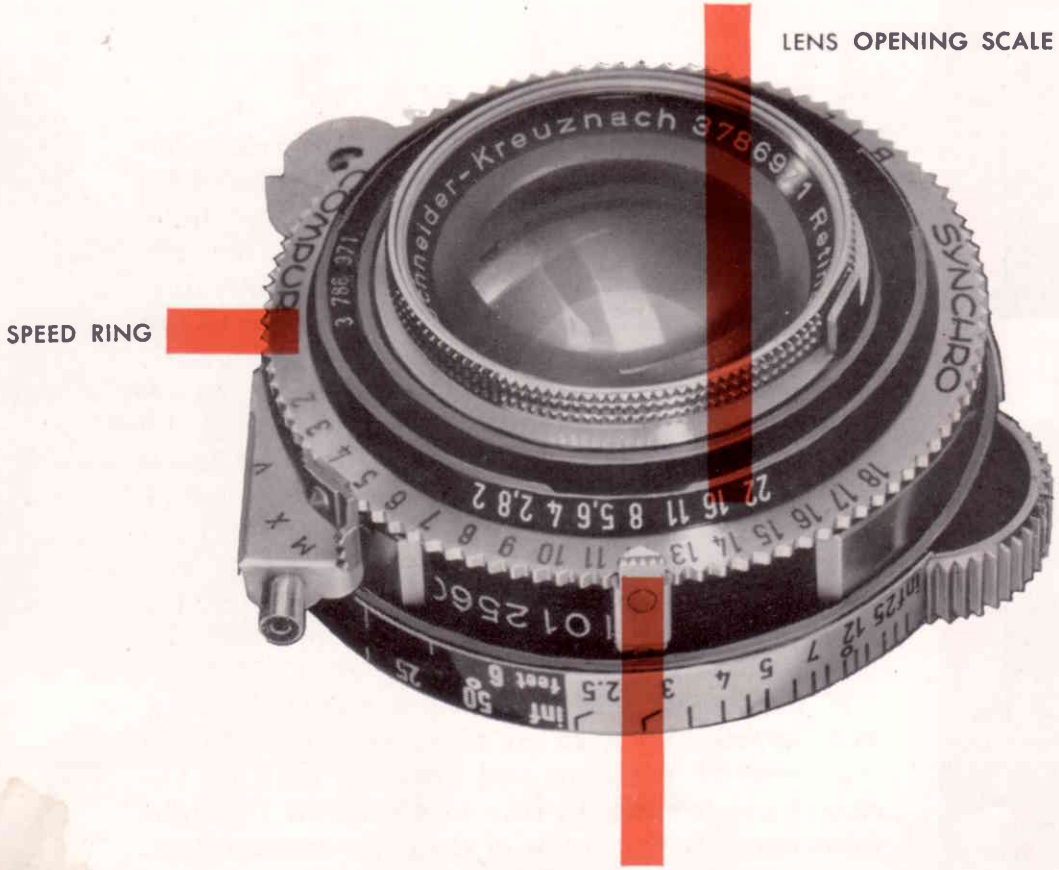
determining exposure

The Retina IIIc has a built-in photoelectric exposure meter which, when the camera is pointed toward the subject, will be used to measure light reflected from the subject. This eliminates difficult calculations and gives the correct light value. The light value is a number corresponding to the amount of light required for correct exposure.

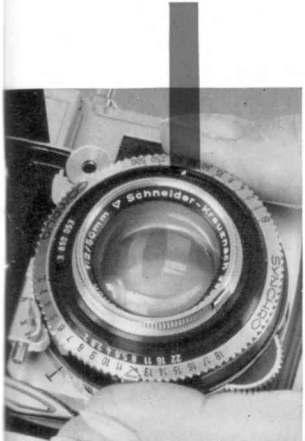
Remove the INCIDENT LIGHT MASK from the exposure meter COVER; then point the camera at the subject, directing it slightly downward. A black needle will move in the WINDOW. Turn the meter SETTING RING, thus moving a red pointer until the pointer is directly over the black needle. If you have taken the reading with the exposure meter cover closed, read off the light value opposite the CLOSED-COVER INDEX on the setting ring.

If the needle of the exposure meter does not move appreciably with the meter cover closed, open the cover by pressing and drawing back on the ribbed upper edge. In this case read off the light value opposite the arrow of the OPEN-COVER INDEX.

NOTE: Use the correct index mark according to whether the cover is open or closed.



SPEED INDEX



On the shutter SPEED RING you will find the same scale of light values, from 2 to 18, that is engraved in red on the exposure meter setting ring. Now transfer the light value read off the setting ring of the exposure meter to the shutter speed ring. To do this, pull the LENS OPENING LEVER slightly outward and move it to the appropriate number on the scale of the ring. If this light value comes outside the limits of the LENS OPENING SCALE, and you cannot move the lever to the desired number, turn the shutter speed ring until the appropriate light value is underneath the lens opening scale. The lens opening lever can only be moved within the limits of the lens opening scale for setting the light value. You can set in-between values on the light value scale if the exposure meter setting ring gives an intermediate reading.

The lens opening scale now shows you the lens opening you have set, while the shutter SPEED INDEX shows the exposure time of the shutter. For example: with a light value of 12 the camera may be set for a combination of lens opening $f/8$ and

1/60 second. Suppose this combination is not suitable for your subject because you need a faster shutter speed such as 1/500 second for a sports shot. In that case turn the speed ring, *pressing the lens opening lever against it* (shown in illustration), from 1/60 to 1/500 second. This automatically adjusts the lens opening to $f/2.8$ and thus compensates for the faster shutter speed time.

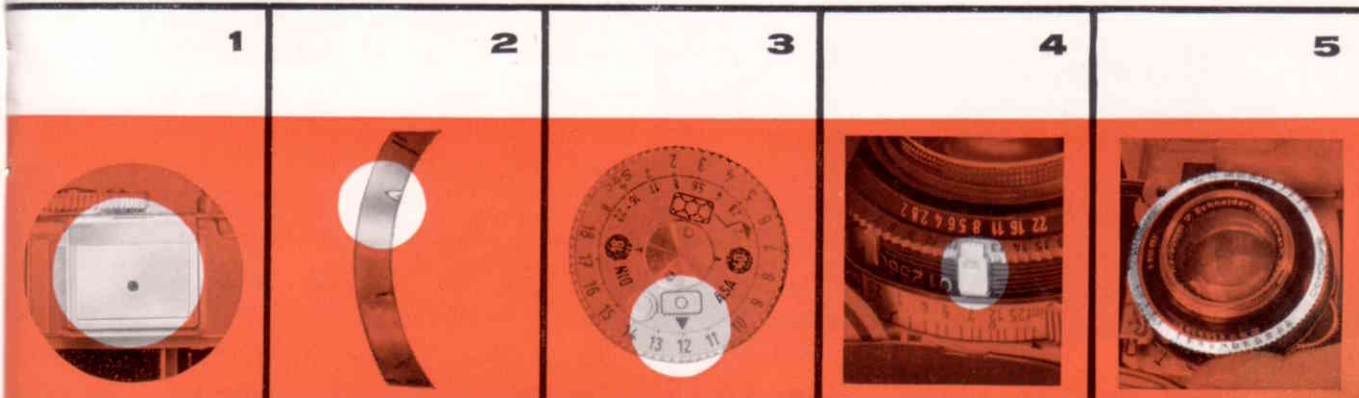
On the other hand, if you intend to take a picture which calls for good depth of field, for example, needing a lens opening such as $f/16$, you must rotate the speed ring in the same manner until the lens opening lever points to the figure 16 on the lens opening scale. This changes the shutter speed to 1/15 second. Such an exposure should, however, only be made from a firm support, for there is risk of camera movement at exposure times of 1/30 second or longer.

You may at first find the operations of determining and transferring the light values slightly unfamiliar. But with a little practice it will be accomplished easily and quickly.

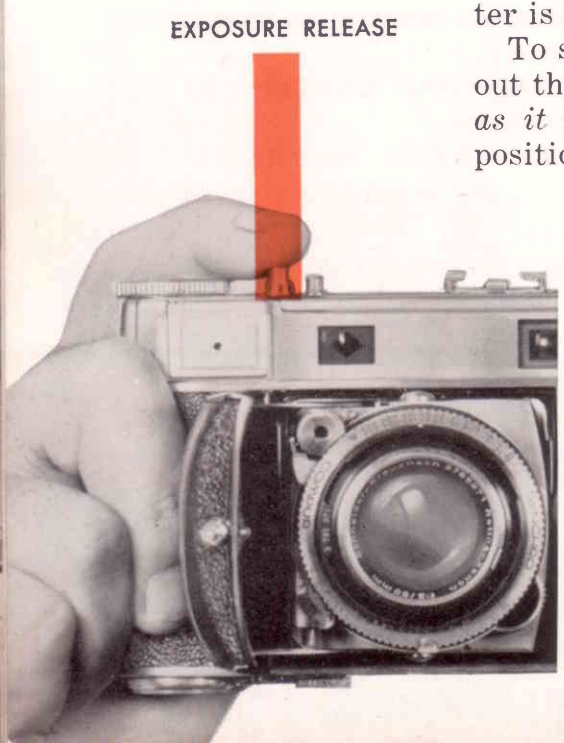
summary of steps

1. Point the exposure meter at the subject.
2. Turn the meter setting ring to make the red pointer coincide with the black needle of the meter.
3. Read off the light value.
4. Set the light value on the shutter speed ring by means of the lens opening lever.
5. If necessary, alter the lens opening-shutter speed combination by simply turning the speed setting ring.

Make sure the lens opening lever is not shifted from the set light value.



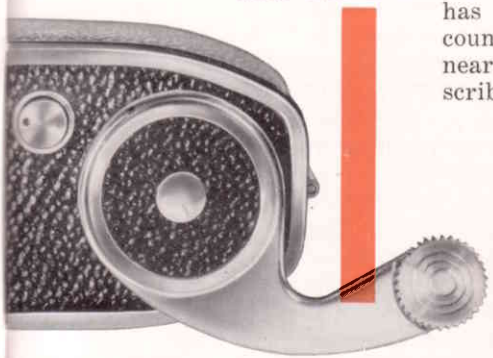
setting and releasing shutter



Look through the finder eyepiece, sight the subject, and press the EXPOSURE RELEASE. If the shutter is not set you cannot press the button.

To set the shutter, with the right thumb swing out the RAPID WIND LEVER in one movement *as far as it will go;* then let it return to its original position. If it does not return, you did not swing it out far enough. Winding this lever, at the same time sets the shutter and—if you have film in the camera—advances the film by one frame and advances the film counter (page 18). Now you can press the exposure release. You will notice how smoothly the release operates; this is important to avoid camera movement.

CAUTION: Make sure that you press the button pointed out in the illustration.



If during this practice operation, the rapid wind lever becomes locked, this means either that the exposure release has not been pressed, or that the film counter is at 1 and must be reset to the nearest diamond-shaped mark as described on page 18.

You are, by now, familiar with the "feel" of your camera and the most important points of camera operation. So, let's select a film from the following pages, load the camera, and take a roll of pictures. If you wish to start off with black-and-white pictures, you might choose a medium-speed film such as Kodak Plus-X; however, inasmuch as your camera is so perfectly suited as a "color camera," you may wish to load immediately with Kodachrome or Kodak Ektachrome Film for pictures in full color.

films

The Kodak Retina IIIc Camera uses Kodak 135 Film

COLOR FILMS

Kodachrome Film — For full-color transparencies which can be projected on a screen or from which prints or enlargements can be made.

Use Kodachrome Film Daylight Type for daylight pictures, and Kodachrome Type A for flash or flood-lighted pictures. 20 or 36 exposures.

Kodak Ektachrome Film—Like Kodachrome, Ektachrome Film produces life-like color transparencies for projection or from which color prints and enlargements can be made. The speed of this film, however, is faster than that of Kodachrome Film. You can process this film yourself or have it processed by your photofinisher.

Use Kodak Ektachrome Film Daylight Type for exposure in daylight, and Kodak Ektachrome Film Type F for pictures with clear flash lamps. 20 exposures.

BLACK-AND-WHITE FILMS

Kodak Plus-X Panchromatic Film—An excellent film for general outdoor and well-lighted interior use. The low graininess and high resolving power permit high-quality enlargements. 20 or 36 exposures.

Kodak Super-XX Panchromatic Film – Combines high speed with complete color sensitivity. Gives fully-exposed negatives under difficult light conditions. 20 or 36 exposures.

Kodak Tri-X Film—An extremely fast panchromatic film of moderate contrast, low graininess, wide exposure and development latitude, and color sensitivity suitable for all types of indoor and outdoor illumination. 20 or 36 exposures.

KODAK FILMS

	EXPOSURE INDEX	
	Daylight	*Tungsten*
Kodachrome (Daylight)	10	2.5*
Kodachrome (Type A)	10**	16
Ektachrome (Daylight)	32	
Ektachrome (Type F)	20††	16†
Plus-X	50	40
Super-XX	100	80
Tri-X	200	160

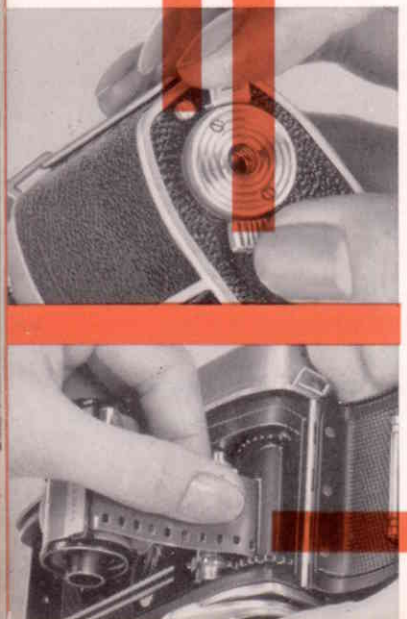
*With Kodak Filter No. 80A

**With Kodak Daylight Filter for Type A Color Films

†With photographic flood lamps and Kodak Filter No. 82A

††With Kodak Filter No. 85C

loading



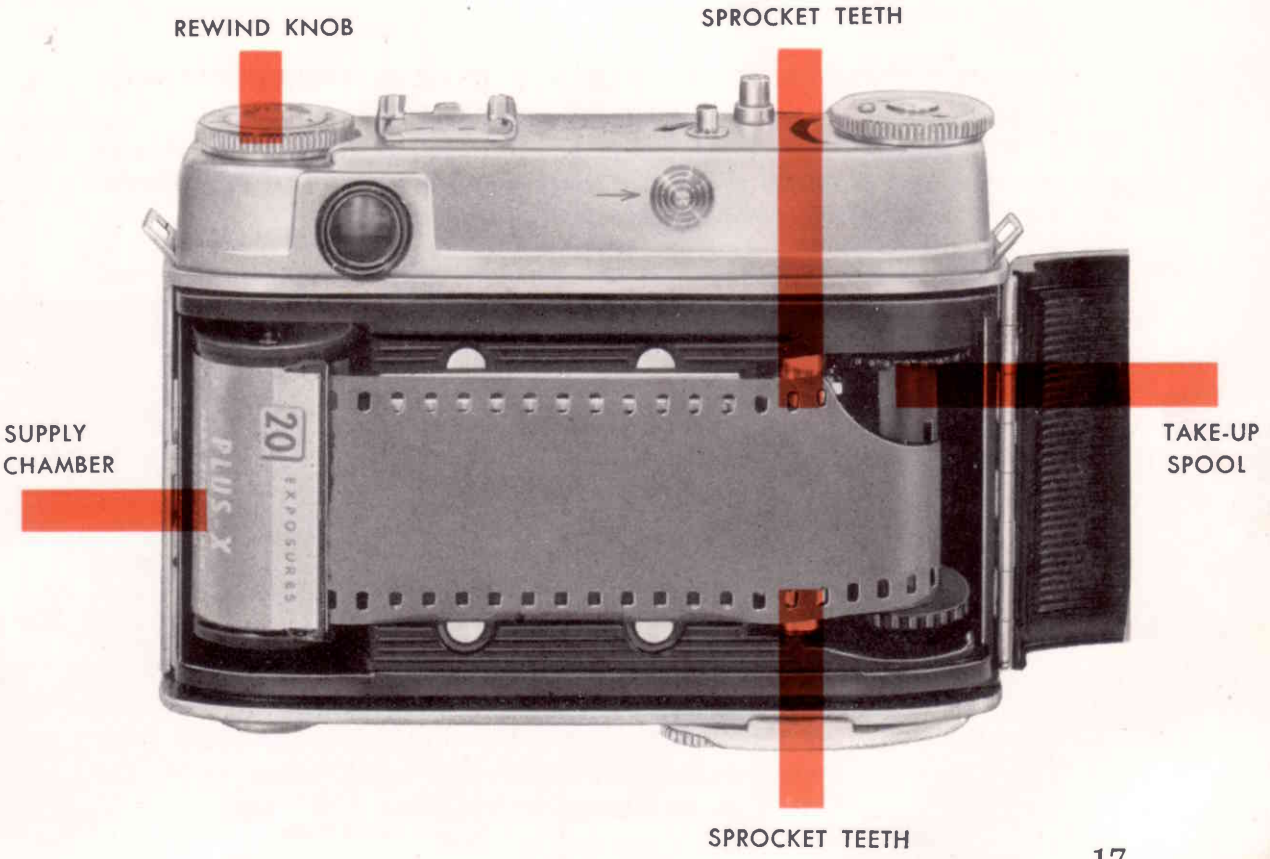
1 To open the back of the camera, press the MILLED LEVER clockwise; the opposite end of the lever then uncovers the opening BUTTON. Press this button and the back springs open.

2 Pull the REWIND KNOB all the way out.

3 Turn the built-in TAKE-UP SPOOL by its flange until a slot points upward.

4 With the lower edge of the film against the take-up spool flange toward the bottom of the camera, push the trimmed end of the film protruding from the magazine far enough into this slot to anchor it.

5 Pull the film over the film track and insert the magazine in the SUPPLY CHAMBER. Then turn the take-up spool by its flange until the SPROCKET TEETH engage the perforations on both sides.


REWIND KNOB
SPROCKET TEETH
SUPPLY CHAMBER
TAKE-UP SPOOL
SPROCKET TEETH
20
EXPOSURES
PLUS X

6 When the film and magazine are correctly positioned, push in the rewind knob, turning slightly if necessary. Make sure that the sprocket teeth engage the film perforations on both sides.

7 Close the back of the camera, by pressing the back against the body until it locks.

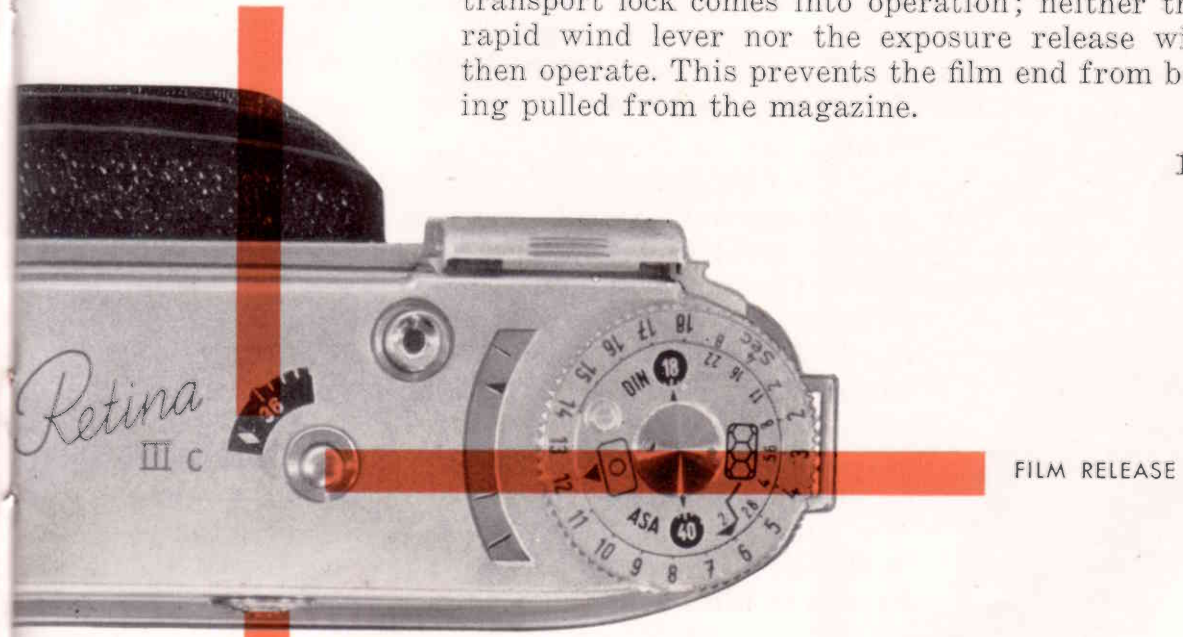
setting the film counter

Press and hold down the FILM RELEASE button; then, at the same time, press the film COUNTER ADVANCE in the direction of the arrow as many times as necessary to bring the diamond-shaped mark near 36 on the FILM COUNTER opposite the notch. If you are using a 20-exposure magazine, set to the diamond-shaped mark between 20 and 25. Press and release the film release button; then swing out and release the rapid wind lever. Do this 2 more times to bring the film counter to 36

or 20, depending on the number of exposures in your magazine.

The film counter always indicates the number of exposures still available. When it has reached 1, a transport lock comes into operation; neither the rapid wind lever nor the exposure release will then operate. This prevents the film end from being pulled from the magazine.

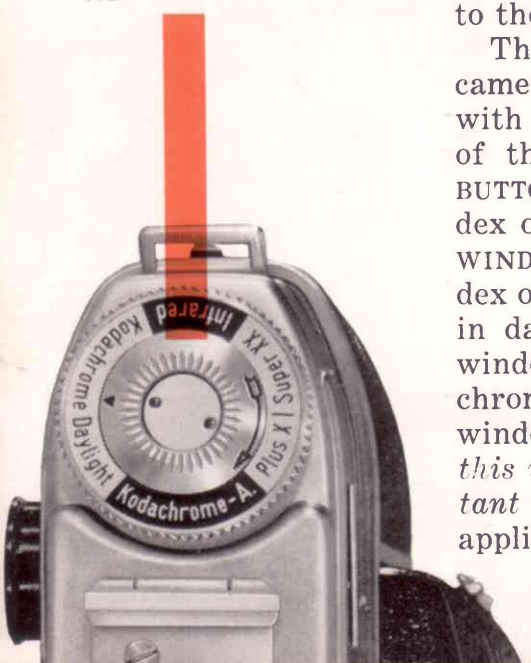
FILM COUNTER



FILM RELEASE

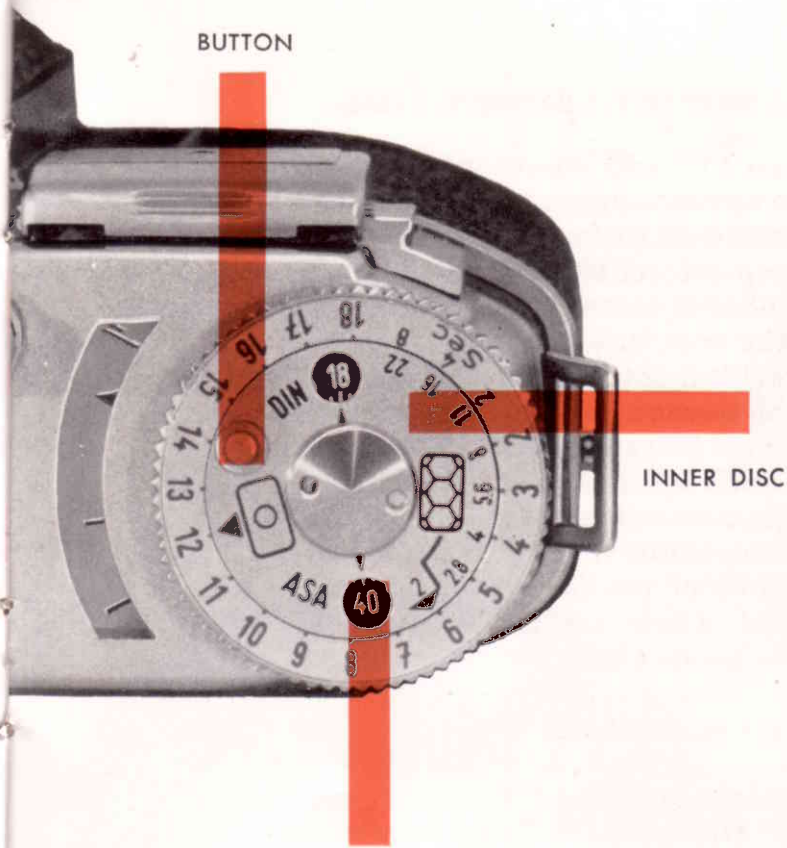
COUNTER ADVANCE

setting the exposure index



Set the type of film loaded in the camera on the FILM INDICATOR. Grip the rewind knob with two fingers and turn the inner ring with the thumb of the other hand until the triangular index points to the type of film loaded in the camera.

The exposure index of the film loaded in the camera can be found in the instructions packed with the film and on page 15. Turn the INNER DISC of the exposure setting ring by means of the BUTTON until the appropriate ASA exposure index of the film in the camera appears in the ASA WINDOW. For example: The daylight exposure index of Kodak Plus-X Film is 50; for this film used in daylight, set 50 (slightly beyond 40) in the window. The daylight exposure index of Kodachrome Film Daylight Type is 10; set 10 in the window for daylight exposure of this film. *Setting this value correctly in the ASA window is important to proper exposure.* The window marked DIN applies to films rated by a different method.



unloading

Always Unload in Subdued Light

To rewind the exposed film, depress the CLUTCH BUTTON in the base of the camera and pull the rewind knob straight out until you feel resistance (about a quarter inch). Then turn the rewind knob in the direction of the arrow until the clutch button ceases to rotate; this is easily observed by the small black dot near the rim of the button. The film is now rewound into the magazine; open the camera back, pull out the rewind knob all the way, and remove the magazine.

CLUTCH BUTTON

setting the focusing scale

In addition to using the coupled rangefinder to determine distance automatically, you can also set the FOCUSING SCALE (for 50mm lens) manually for film plane-to-subject distance. Set the correct film plane-to-subject distance on the focusing scale opposite the FOCUSING INDEX.

The small red dot next to the focusing index is to be used instead of the focusing index when focusing with Infrared Film. Therefore, turn the focusing knob until the figure corresponding to the film plane-to-subject distance is opposite the red dot when using Infrared Film.

The bottom of the focusing ring carries three other scales. These are for use with the interchangeable lenses which are described on page 32.

depth of field

After you have properly focused on your subject, the subject will be sharp in the picture. However,

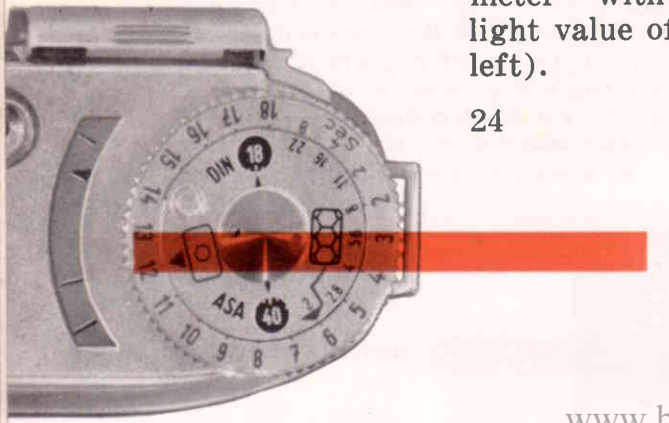
other objects in the picture area, both in front of and behind the subject, will also be in focus. This is "range of sharpness" or "depth of field."

To permit instant reading of the depth of field for any lens opening and distance, a DEPTH-OF-FIELD SCALE composed of numbers corresponding to lens openings is arranged on either side of the focusing index.

Suppose you have set the aperture to f/8 and the distance to about 9 feet; this is how you read off the depth: To the left of the focusing index the line marked with the figure 8 (corresponding to the lens opening) is opposite 6 feet. To the right of the index another line marked with the figure 8 points to 16 feet. This tells you that with a setting of about 9 feet at f/8 you have a depth-of-field zone extending from about 6 to 16 feet. Within this zone everything will be sharp.

zone focusing

Technically good exposures depend largely on the skilled combination of correct distance, shutter speed, and lens opening settings. However, you may encounter subjects where you just haven't the time to work out the ideal setting or to use the rangefinder, if you don't want to miss the picture. For such occasions your camera carries two zone focus settings: one for near and one for distant subjects. With these settings you must, however, have adequate light; the pointer of the exposure meter – with the cover closed – should indicate a light value of at least 12 (see illustration at the left).



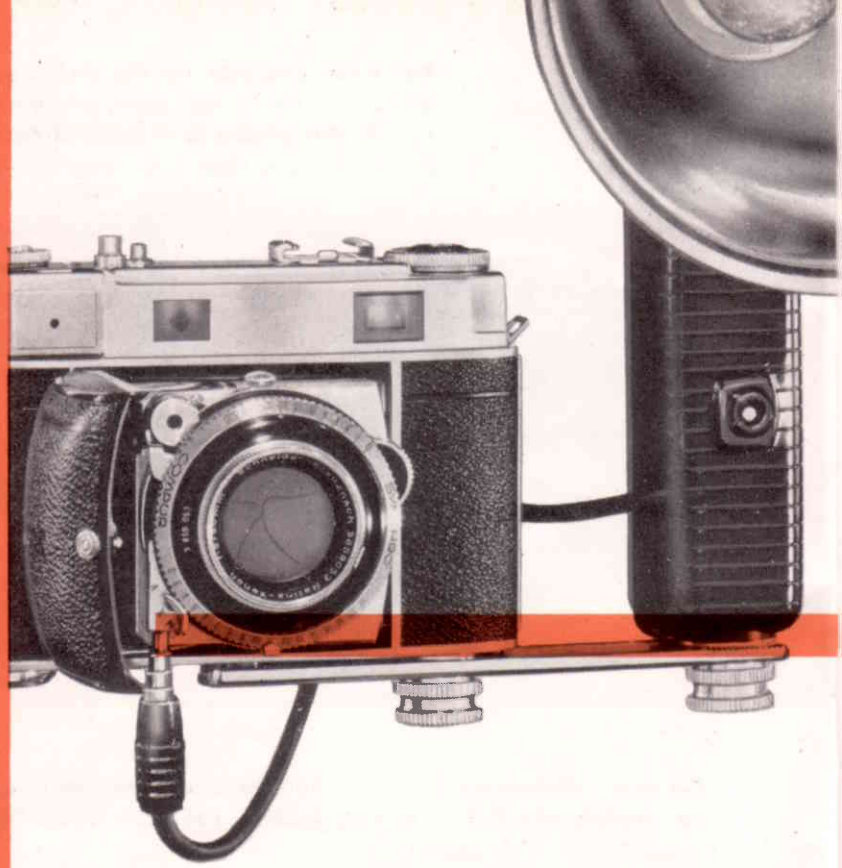
For near subjects *set the distance to the small circle near the 10-foot mark, and the lens opening to f/8. This gives you a depth of field from about 6½ to 20 feet. (See illustration below.)*

For more distant subjects *use the small circle near the 15-foot mark and an aperture of f/8. This gives a depth of field from about 9½ feet to inf.*

flash pictures

Flash pictures, in black-and-white or color, are easy to make with your camera. The built-in synchronization of your Synchro-Compur shutter permits the use of flash, including electronic flash, at any shutter speed up to the fastest setting of 1/500 second. Flash lamps are fired when the camera shutter is released.

The Kodak Standard Flash-older with Kodak Retina Flash-older Bracket (for Retina IIIc, IIc, Ib, and Retinette f/3.5 Cameras) which is especially designed to accommodate the camera's rapid wind feature, is recommended for use with your Retina IIIc Camera.



attaching the flasholder

Position the flasholder bracket against the bottom of the camera so that the unthreaded locating pin of the bracket engages the hole in the center of the bottom of the camera, and the thumbscrew next to it engages the threads of the camera tripod socket; tighten the thumbscrew. With the flasholder reflector facing in the same direction as the camera lens, tighten the thumbscrew at the end of the bracket into the threaded receptacle in the base of the flasholder battery case. The threaded hole in the base of the thumbscrew that engages the camera tripod socket provides for attaching the camera and flasholder to a tripod.

FLASHPOST

A Kodak Single-Post Flasholder Adapter is attached to the bayonet-connector end of the flasholder cord for use with your Retina IIIc Camera. Slip the open end of the adapter over the FLASHPOST of the camera. When the flasholder is removed from the camera, the adapter should remain with the flasholder cord.

installing the batteries

Batteries are not supplied with the unit but they can be purchased from your Kodak dealer. Get two size "C" batteries (photoflash are best). For extra-strong, long-lasting power, the Kodak B-C Flashpack and one 22½-volt battery are available to power the unit instead of the "C" size batteries.

To install the batteries, loosen the coin-slotted screw on the back of the flasholder, and remove the back. Next, insert the two size "C" batteries between the upper and lower spring contacts of the flasholder with the center contact tips of the batteries up; then replace the back.

IMPORTANT: Successful synchronization requires batteries that will test at least 5 amperes. Batteries that have been stored for long periods, especially under conditions that allow them to dry out, will not be satisfactory. With the B-C Flashpack, current is drawn from a condenser rather than directly from the battery.

There are three letters engraved on the block of the flashpost; M and X are synchronizer settings for flash, V is the self-timer setting. These settings are adjusted by the SELECTOR lever.

Using Class F Lamps, such as SM or SF – Set the synchronizer selector pointer on X (pointer in illustration is set at X), set the shutter speed at any speed from 1 to 1/125 second, and consult the table on page 31 for exposure information.

Using Class M Lamps, such as No. 5, No. 25, or No. 8–Set the synchronizer selector pointer on M for shutter speeds from 1 to 1/500. See the table on page 31 for exposure information.

Using Electronic Flash – Set the synchronizer selector pointer on X. With electronic flash equipment having no lag in the trip circuit, set the shutter at any speed from 1 second to 1/500 second.

SELECTOR

NOTE: Do not use units flashed by means of heavy-duty relays or solenoids. Such units may completely destroy the shutter contacts.

inserting lamps

To insert the lamp, place the two pins on the base of the lamp in the slots in the socket; then push the lamp straight into the socket. *Do not twist the lamp.*

To release the lamp from the socket, push the LAMP RELEASE spring located on the top of the flasholder. The lamp will fall from the socket.

Flash lamps are too hot to handle immediately after they have been fired, therefore, never try to pull a lamp out of the socket—use the lamp release. Also, pulling lamps from the socket by force may damage the socket.

Do not insert a flash lamp in the socket if the end of the cord is plugged into the extension terminal on the front of the flasholder handle. The lamp will flash and a serious burn may result.

CAUTION: Do not flash lamps in an explosive atmosphere. Since lamps may shatter when flashed, the use of the Kodak 2-Way Flashguard over the reflector is recommended.

flash guide

To calculate the lens opening, divide the exposure guide number by the lamp-to-subject distance in feet.

THE SELF-TIMER

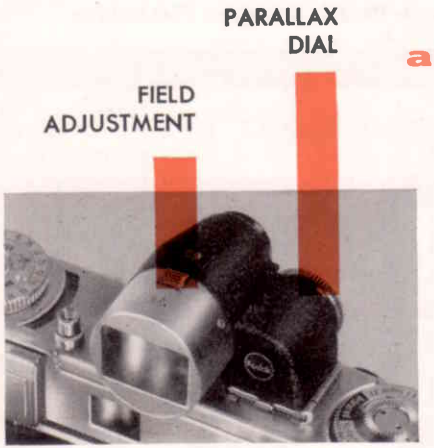
If you wish to include yourself in a picture, first operate the rapid wind lever; then set the selector pointer to V. Start the self-timer mechanism by pressing the exposure release. The shutter will go off after about 10 seconds; you therefore have sufficient time to take your place in the picture.

If you use the self-timer for flash shots, the camera works with the X-synchronization. As the self-timer runs down, the synchronizing lever automatically moves to X. Be sure to use the correct shutter speed setting for X-synchronization, (see table).

Flash Exposure Guide Numbers for Kodak Retina IIIc with Kodak Standard Flasholder

Lamps	Selector	Shutter Speed	Plus-X	Super-XX	Tri-X	Kodachrome Type A	Ektachrome Type F
SM-SF	"X"	Open to 1/30	85	120	160	55	
		1/60	80	120	160	50	
		1/125	75	100	150	45	
No. 5 or No. 25	"M"	Open to 1/30	150	220	300	80*	120
		1/60	130	190	270	70*	100
		1/125	110	150	220	55*	85
		1/250	85	120	170	40*	65
		1/500	60	85	120	30*	45
No. 8	"M"	Open to 1/15	110	150	220	55*	85
		1/30	95	140	190	50*	75
		1/60	90	130	180	45*	70
		1/125	85	120	170	40*	65
		1/250	70	100	140	35*	55
			Kodachrome Daylight Type			Ektachrome Daylight Type	
No. 5B or No. 25B	"M"	Open to 1/30	50			80	
		1/60	45			70	
		1/125	35			55	

*With Kodak **Flash Filter No. 81C**



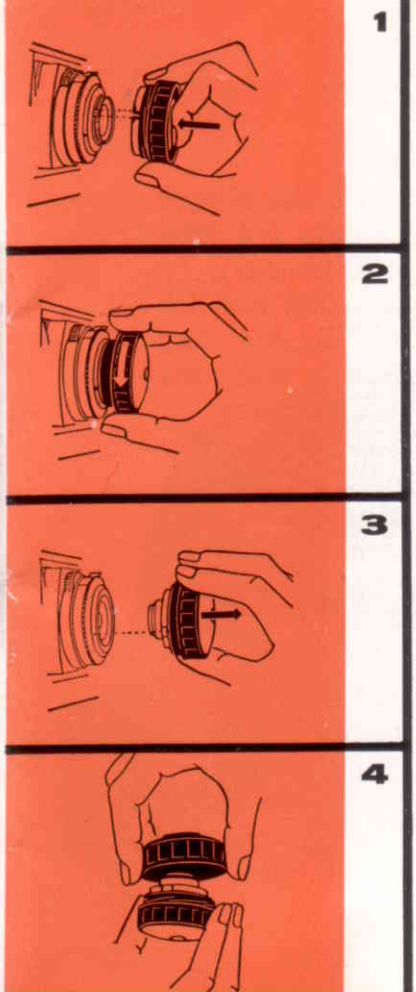
Attach this finder to the camera by sliding the base shoe of the finder into the clip as shown above. Roll the knurled FIELD ADJUSTMENT as far as it will go toward 80 to set the field for the 80mm lens, and toward 35 to show the field for the 35mm lens. The red dot on the adjustment will indicate the finder setting.

Rotate the PARALLAX DIAL until a *red* figure corresponding to the *camera*-to-subject distance in *feet* is at the white index dot. Disregard the *chrome* figures corresponding to the *camera*-to-subject distance in meters.

auxiliary interchangeable lenses

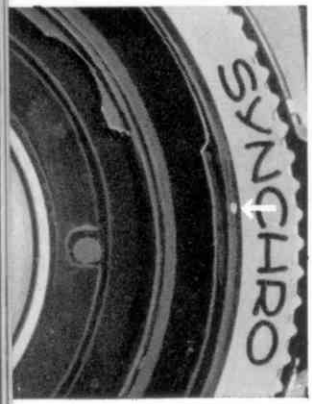
Both an 80mm long-focus lens component, especially suited to portraits and long-range subjects, and a 35mm wide-angle lens component, particularly useful when you wish to cover a wide subject field, are available to widen the scope of your Retina IIIc Camera. The Kodak Retina 35-80 Optical View Finder (for Kodak Retina IIIc and IIc Cameras), shown at the left, is available to show the field of view for both the 35 and 80mm lenses.

The standard lens of your camera is the 6-element, *f*/2, 50mm, Kodak Retina-Xenon C Lens. When the front component of this lens is removed to admit one of the auxiliary lenses, the shutter blades are exposed. Behind the blades is the rear lens component. This forms a complete lens only in combination with the standard, telephoto, or wide-angle lens components specified for this camera. *Change lenses in subdued light.*



The front component of the standard lens is locked in place by a bayonet-type, internal snap-lock mechanism. For removal and storage of the front component, the use of the Kodak Retina 50mm Lens Component Case, a special grip-top container, is recommended. As shown in the illustration, after removing the top of the case, (1) press in the transparent center of the top to bring the grip-insert to its full-open position. (2) Place the insert over the lens rim, press the black outer ring toward the lens as far as it will go to tighten the hold of the grip-insert; then turn counterclockwise. (3) Remove the lens. (4) Without removing the lens from the grip-top, place the bottom of the container over the lens while it is held in the grip-top, engage the threads of the top and bottom of the container, and tighten. The lens can be replaced on the camera by placing the red dot on the lens flange opposite the red dot on the lens opening ring and turning the lens clockwise until the snap-lock engages. *Make sure that the lens is tight.*

telephoto shots



Telephoto effects can be obtained with the Kodak Retina Longar Lens Component, 80mm *f*/4 (for Kodak Retina Cameras with Xenon C Lenses). To attach the lens to the camera, place the red dot exactly opposite the red dot (arrow in illustration) on the lens opening ring; then press in and turn the lens clockwise until the snap-lock engages.

The rangefinder can be used to focus not only the 50mm lens, but also the 80mm or 35mm lens.

To focus the Longar lens, determine the camera-to-subject distance with the camera rangefinder and note the distance figure opposite the index on the focusing scale for the standard 50mm lens. Now, tilt the camera up and look underneath the shutter to find the TELE-SCALE. Then transfer the measured value to the part of the tele-scale marked with chrome figures on black. To do this, turn the focusing knob until the measured distance on the tele-scale is opposite the "T" INDEX mark.

By attaching a Kodak Retina 80mm Auxiliary

Lens (for Kodak Retina Longar Lens Component, 80mm *f*/4) to your telephoto lens, you can also focus the telephoto lens with the rangefinder for distances from 6 feet to 3.5 feet. In that case, transfer the measured distance to the part of the tele-scale with the gold figures on black.

"T" INDEX TELE-SCALE

The rotating ring on the telephoto lens is for indicating depth of field only; the camera cannot be focused with this ring. The distance scale of the ring is engraved in the same colors as the tele-scale as a reminder to set the appropriate scale for correct focus.

CAUTION: Remember that the largest lens opening of your Longar lens is f/4. Therefore, when moving the speed ring, make sure that the lens opening lever does not indicate a larger lens opening than f/4; that is, f/2 or f/2.8. Otherwise the picture will be underexposed.

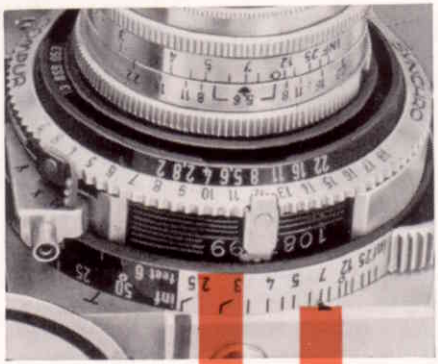
wide-angle shots

CAUTION: Remember that the largest lens opening of your Curtar lens is f/5.6. Therefore, when moving the speed ring, make sure that the lens opening lever does not indicate a larger lens opening than f/5.6; that is, f/4, f/2.8, or f/2. Otherwise the picture will be underexposed.

For wide-angle effects with your camera, use the Kodak Retina Curtar Lens Component, 35mm *f*/5.6 (for Kodak Retina Cameras with Xenon C Lenses). To attach the lens to the camera, place the red dot opposite the red dot on the lens opening ring; then press in and turn the lens clockwise until the snap-lock engages.

To focus the Curtar lens correctly, get the camera-to-subject distance with the rangefinder and note the distance figure opposite the index on the focusing scale for the standard lens. Now, transfer the distance figure obtained with the rangefinder to the WIDE-ANGLE SCALE (black figures on chrome) by turning the focusing knob to bring the appropriate figure to the triangular WIDE-ANGLE INDEX.

Like the telephoto lens, the wide-angle lens carries a color-keyed scale for indicating depth of field *only*.



WIDE-ANGLE SCALE WIDE-ANGLE INDEX

setting exposures

without light values

Shutter speeds and lens openings can also be set without reference to the light value scale. However, the *shutter speed must be set first* and the lens opening after. Otherwise, the lens opening will be changed because of the speed ring coupling.

time exposures

If a meter reading indicates a lens opening-shutter speed combination by which the lens opening lever reaches the limit of its movement when you try to set a small lens opening, you can still take the picture. Simply mount the camera on a tripod and take a time exposure* with the shutter set at B. The green figures on the meter setting ring show the exposure required at the desired lens opening setting. The illustration shows exposures of 2 sec. at *f*/11, 4 sec. at *f*/16, or 8 sec. at *f*/22.

Set the lens opening; then press the exposure release for the correct interval; the shutter is open while the exposure release is depressed.

*The Kodak Metal Cable Release No. 5 screws into the top of the exposure release.

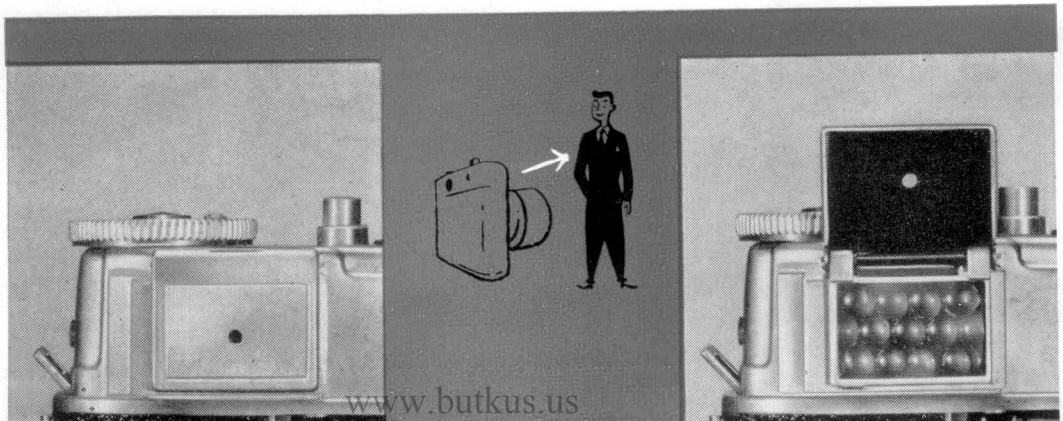
exposure meter

Two ways to use it

The exposure meter of the Retina IIIc can be used in two different ways: for reflected light readings (usual way) and for incident light readings.

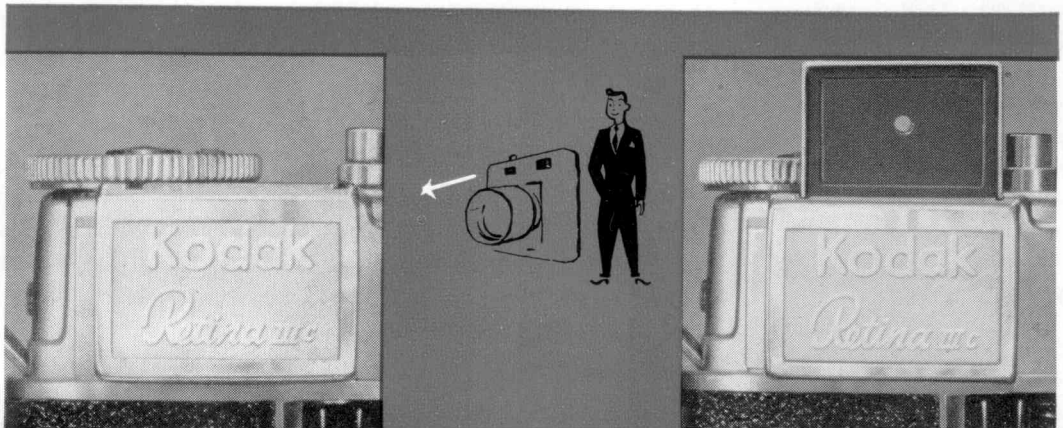
Reflected light readings are taken from the camera position toward the subject as described on page 7. This method is suitable for all subjects without strong contrasts of light and shade and where there is no particularly dark or exceptionally brilliant background or surroundings (sky or water).

1

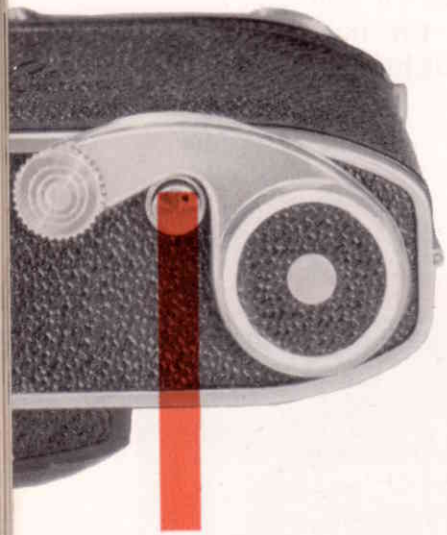


Incident light readings are taken with the camera pointed from the subject towards the picture-taking position. With this method, the incident light mask must always be fitted over the cell of the exposure meter regardless of whether the cover is opened, or closed as shown below. This method is particularly suitable for determining the light value in against-the-light shots, snow subjects, and close-ups.

2



multiple exposures



CLUTCH BUTTON

In normal use of the camera, the interlock system guards against multiple exposure by locking the exposure release after an exposure until the rapid wind lever is actuated; operating this lever also sets the shutter, advances a frame of film, and moves the film counter.

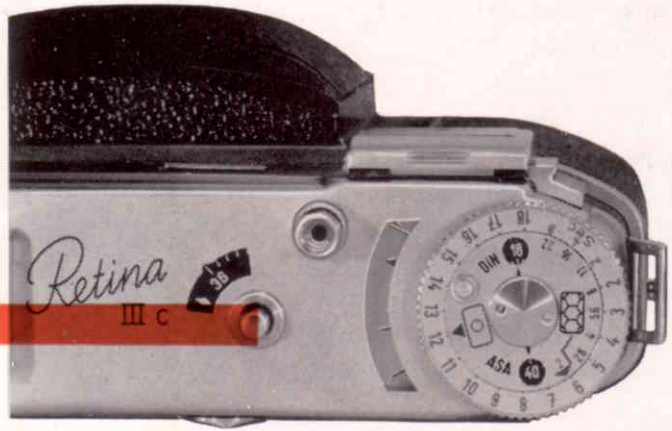
To take an intentional multiple exposure, first make the original exposure; then *press and hold* the CLUTCH BUTTON *while operating* the rapid wind lever. Pressing this button disengages the film advance mechanism but permits the operation of the rapid wind lever to set the shutter. (Use this method also for saving film if flash lamps fail to fire.)

Inasmuch as the film counter is also advanced, one or more frames of film will be available than is shown on the counter. To be able to use these frames of film after the counter reaches 1, thus locking the rapid wind lever, press and hold down the film release button; then press the film

counter advance in the direction of the arrow as many times as is necessary to bring the diamond-shaped mark on the film counter opposite the notch. The rapid wind lever can then be operated.

the film release

The FILM RELEASE button can be used to deal with any blockage of the rapid wind lever that may occur. Just press the film release button; if the lever is locked between the start and end of its swing, it will spring back into place.



a complete system

of photography with the

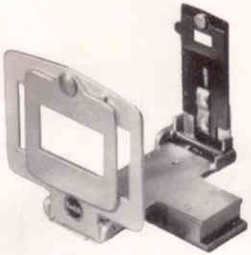
Retina IIIc

Certain auxiliary equipment has been referred to and described previously in the manual. This equipment, and the items that follow are, or soon will be, available to extend the picture-taking scope of your Retina Camera. See your Kodak dealer.

Kodak Combination Lens Attachments. Standard and Curtar Lenses use the No. 29 Kodak Adapter Ring to accept the Kodak Combination Lens Attachments Series VI; Kodak Lens Hood, Series VI-A. The Longar Lens uses the 2⅜ inch (60mm) Adapter Ring to accept the Series VIII lens attachments.

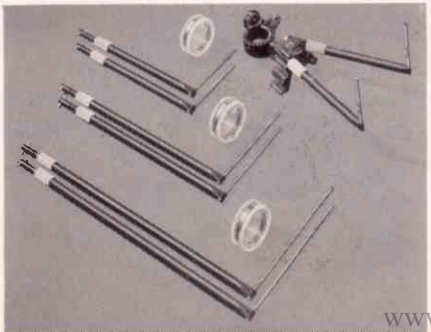
Kodak Retina Field Case Model B (for Kodak Retina IIIc, IIc, and Ib Cameras). Stitchless construction — leather with chrome-finished metal reinforcement — plush lined — pivoting and removable front — adjustable neckstrap. Elastic band inside of top is for storing incident light attachment of exposure meter. To remove front of field case, *slide* attaching button *upward.*

Kodak Retina 50-80 Sports Finder (for Retina IIIc and IIc Cameras). This folding, open-frame finder shows the field covered by the 50 and 80mm lenses. Manual parallax adjustment. 80mm finder frames swing in or out of 50mm frame. Chrome finished. Compact. Supplied in leather case attachable to carrying case strap.

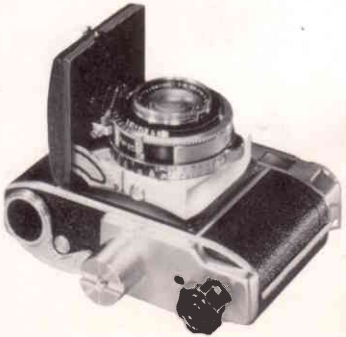


Kodak Retina Close Range and Viewfinder Kit, Model B (for Kodak Retina IIIc, IIc, and Ib Cameras). This kit is used for optically measuring film-to-subject distances, and for determining the precise field covered by the 50mm lens supplemented by the N1, N2, or the combination of the N1 and N2 auxiliary lenses. This extends the focusing range of the Retina Camera down to 11 5/8 inches film-to-subject distance. Supplied complete: Range and viewfinder with two supplementary lenses in fitted case.

Kodak Retina Close-up Kit, Model B (for Kodak Retina IIIc, IIc, and Ib Cameras). This kit measures close distances (11 to 6 inches) and the field sizes mechanically at 4 settings by means of 4 pairs of field guides. The maximum field covered is about 4 x 6 inches. The minimum is about 1½ x 2 inches. The outfit consists of a field guide holder, 4 pairs of field guides, and 3 R-type auxiliary lenses. For use, the kit requires the Kodak Retina Camera Platform, Model B.



Kodak Retina Camera Platform, Model B (for Kodak Retina IIIc, IIc, Ib, and Retinette f/3.5 Cameras). This platform fits the bottom of the camera and provides a tripod socket in the center of the camera base. It is required for using certain auxiliary items of equipment.



Kodak Table Top Camera Stand, Model B. Consists of base, 2-section telescoping column, ball-and-socket head, and right angle head. It provides flexible yet rigid support for miniature cameras from a few inches to about a foot above the base. Can be disassembled.

Kodak Retina Microscope Adapter Kit, Model B (for Kodak Retina IIIc, IIc, and Ib Cameras). Photomicrographs can be made easily with the above outfit. Fits practically all microscopes — eye piece diameter 1 inch. Reduction on the film is 5 to 1. The negatives can be enlarged considerably in excess of 5 times; consequently, microphotographs can be made considerably in excess of the power of the microscope. Exposure is made while watching the specimen through the eye piece. Outfit consists of microscope adapter, clamping ring, and light-value diaphragm locking ring.

DETAILS

FILM

FILM SIZE—Kodak 135, 20- or 36-exposure magazines
NEGATIVE SIZE—24mm x 36mm

LENS—50mm, f/2 Retina-Xenon C, coated, 6 elements. Changeable front component held by bayonet-type snap lock; removable to substitute auxiliary lenses
LENS OPENINGS—f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16, f/22

SHUTTER

SYNCHRO - COMPUR — Automatically cocked when film is advanced
SPEEDS—1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/250, 1/500 and "B"
RELEASE—plunger type on top of camera, or Kodak Metal Cable Release No. 5
SELF-TIMER—Built-in, selector at "Y," about 10 seconds delay
FLASH—Built-in synchronization for class F, M, and electronic flash

EXPOSURE METER—Integral part of camera. Element is moisture sealed. Reads reflected and incident light (with mask)

FOCUSING AND VIEWING

COUPLED RANGE FINDER—Superimposed image type
VIEWFINDER — Optical, projected viewframe type combined with range finder
FOCUSING RANGE—2½ feet to infinity

DOUBLE EXPOSURE PREVENTION—Automatic; multiple exposures possible

RAPID WIND LEVER—Advances film and sets shutter with one stroke

CONSTRUCTION

BODY—Die-cast aluminum alloy, black leather covered
TRIPOD SOCKET—In camera base, standard American thread
SERIAL NUMBER—On top of Camera, behind accessory clip

Combination Lens Attachments — Series VI, Kodak Adapter Ring No. 29 with standard or wide-angle lens. Series VIa Lens Hood. Series VIII 2⅜-inch Kodak Adapter Ring with telephoto lens

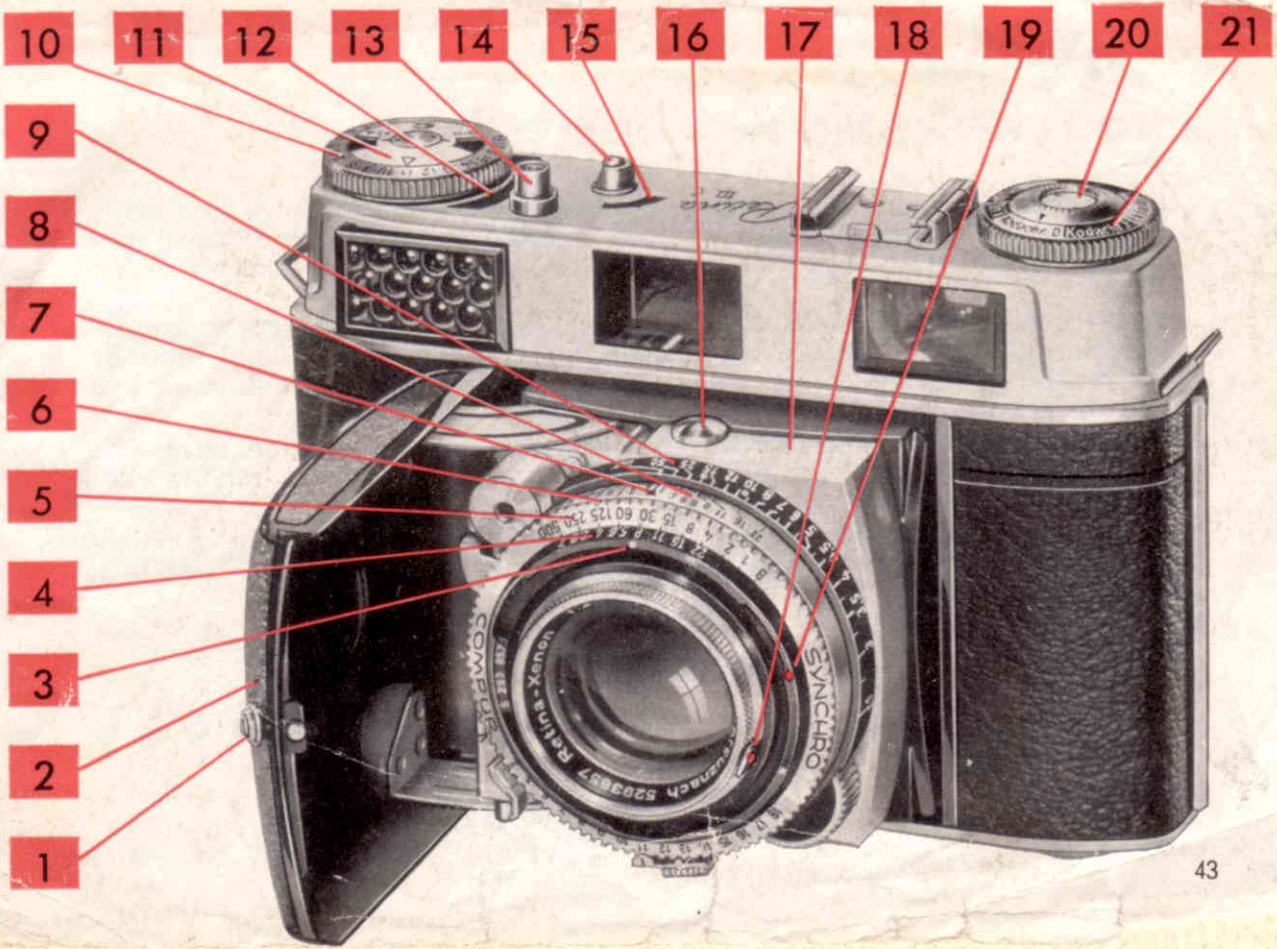
EASTMAN KODAK COMPANY • ROCHESTER 4, NEW YORK

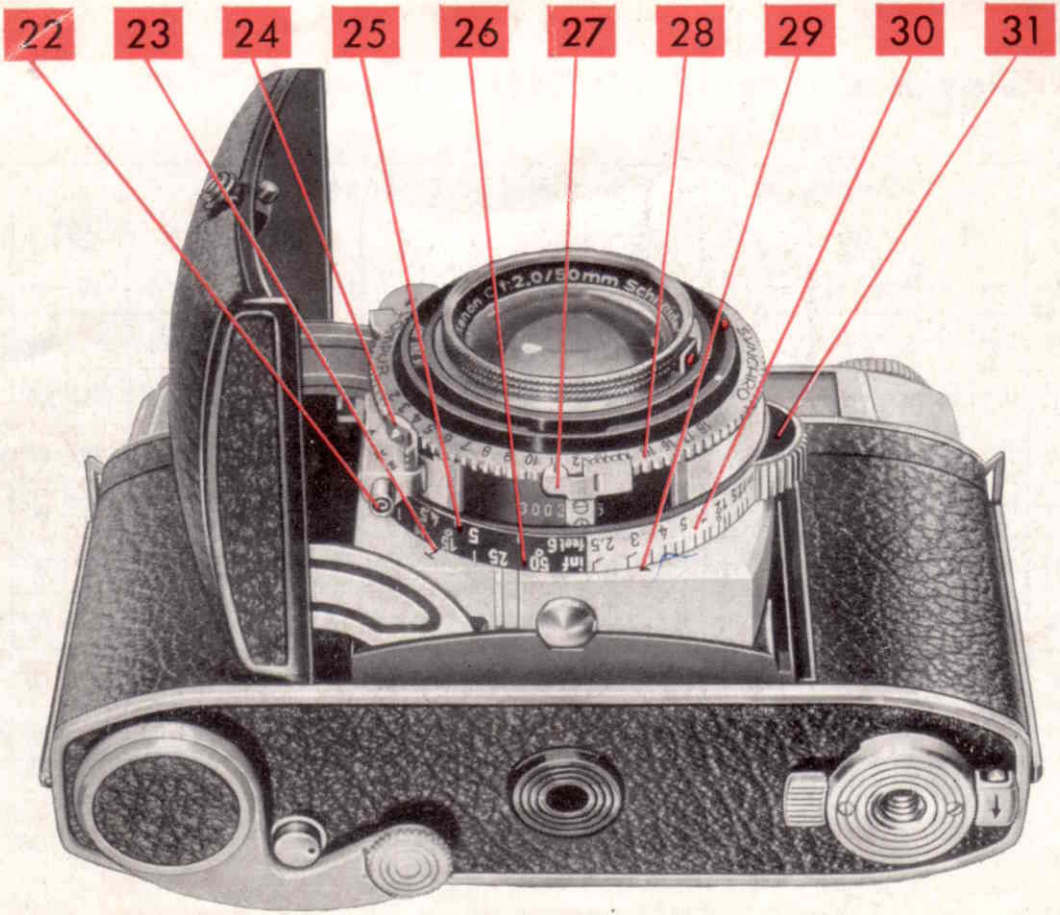
4-55-CH-AE

PRINTED IN THE UNITED STATES OF AMERICA

The Camera Features

1 Button to open camera front
2 Baseboard
3 Setting index for apertures and shutter speeds
4 Aperture scale
5 Shutter speed scale
6 Shutter speed setting ring
7 Focusing index
8 Depth of field scale
9 Distance scale
10 Exposure meter setting ring
11 Film speed disc of exposure meter
12 Exposure meter cell
13 Shutter release button
14 Film release button
15 Film counter
16 Button to close camera
17 Lens panel
18 Red dot on lens mount
19 Red dot on bayonet mount of camera
20 Rewind knob
21 Film indicator
22 Flash socket
23 Focusing index for tele lens
24 Green synchronizing and self-timer lever
25 Distance scale for tele lens with T 1/60 close-up lens
26 Distance scale for tele lens
27 Light value setting lever
28 Light value scale
29 Focusing index for wide-angle lens
30 Distance scale for wide-angle lens
31 Focusing knob
32 Button to open camera back
33 Tripod bush
34 Safety lever for button 32
35 Eyepiece of large-size view- and rangefinder
36 Locating hole for accessories
37 Rapid winding lever
38 Button to set film counter
39 Reversing button
40 Transport sprocket
41 Built-in take-up spool
42 Camera back

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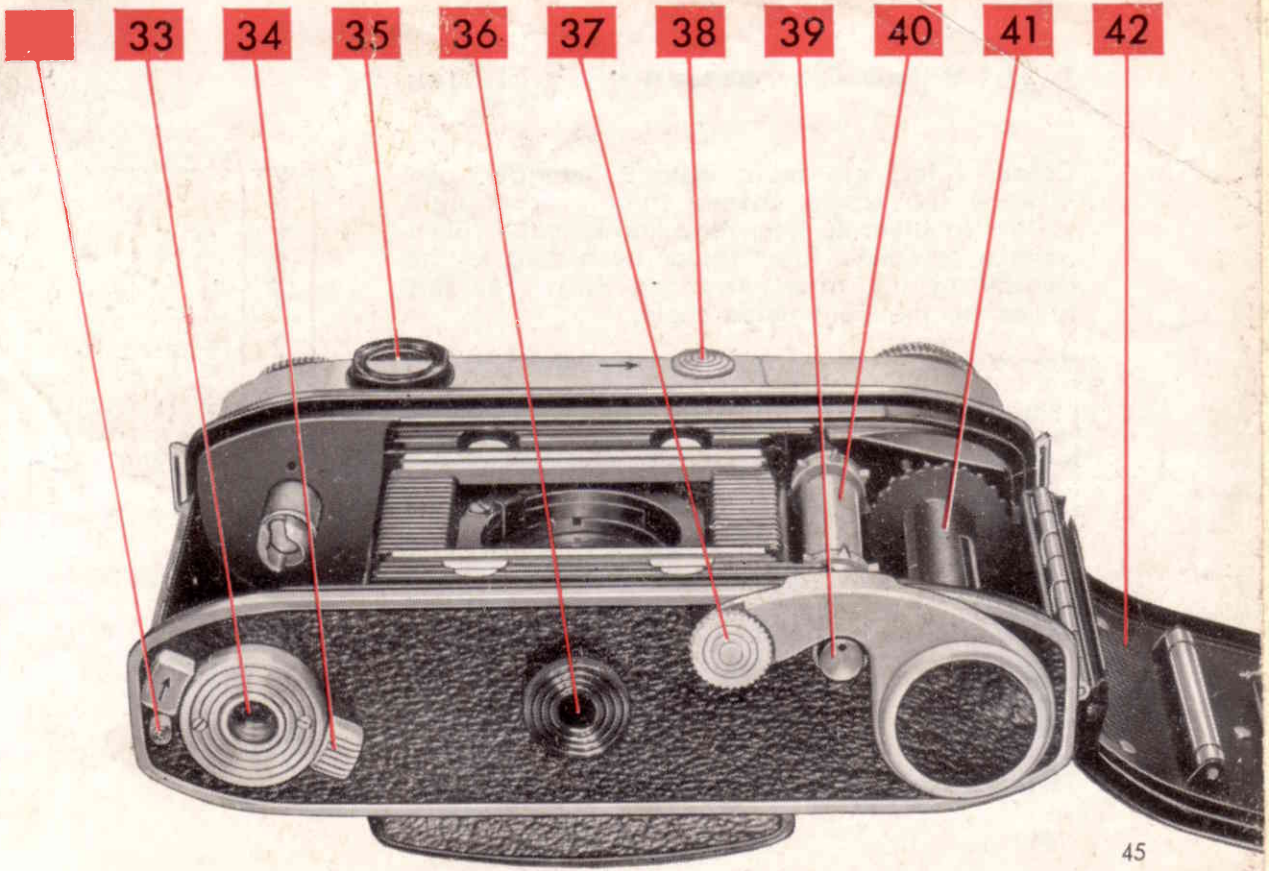

Light Value Correction with Filters

Colour filters are indispensable for good pictures – the range covers colours from light yellow to blue. As you may know, most filters have a so-called filter factor according to the density of the filter. You can allow for this factor on the light value scale.

Filter		Factor	Reduce Light Value Setting by
Light yellow	F I	1½ x	1½
Medium yellow	F II	2 x	1
Yellow green	F III	2 x	1
Orange	F IV	3 x	½
Red	F V	7 x	3 (2¾)
Blue	F VI	2½ x	1½ (1¼)
Ultra-violet	–	–	–
Polarising filter	–	2½ x	1½ (1¼)

There are also special filters for KODACHROME film.

Depth of Field Table (Sharp Zones * in feet)

Aperture	Depth at Distance Setting in feets																											
	2 1/2		3		3 1/2		4		4 1/2		5		6		7		8		10		12		15		25		50		INF	
	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to	from	to
2	2'5"	2'7"	2'11"	3'1"	3'4"	3'8"	3'10"	4'2"	4'3"	4'9"	4'9"	5'4"	5'7"	6'6"	6'5"	7'8"	7'3"	8'11"	8'9"	11'6"	10'3"	14'3"	12'5"	18'9"	18'6"	38'	29'	166'	70'9"	INF
2,8	2'5"	2'8"	2'10"	3'3"	3'4"	3'9"	3'9"	4'4"	4'2"	4'11"	4'7"	5'6"	5'4"	6'9"	6'2"	8'	7'	9'4"	8'4"	12'3"	9'9"	15'5"	11'8"	20'10"	16'10"	48'	25'	220'	51'	INF
4	2'5"	2'8"	2'10"	3'3"	3'3"	3'10"	3'8"	4'5"	4'2"	5'1"	4'6"	5'10"	5'3"	7'1"	5'11"	8'6"	6'8"	10'1"	8'	13'6"	9'1"	17'7"	10'7"	25'3"	14'9"	81'	20'10"	INF	35'10"	INF
5,6	2'4"	2'9"	2'9"	3'4"	3'2"	4'	3'5"	4'8"	3'11"	5'4"	4'3"	6'1"	5'	7'8"	5'7"	9'5"	6'3"	11'8"	7'3"	16'	8'3"	21'11"	9'7"	35'	12'9"	91'5"	16'11"	INF	25'7	INF
8	2'3"	2'10"	2'8"	3'6"	3'	4'3"	3'3"	4'11"	3'9"	5'10"	4'	6'8"	4'8"	8'8"	5'2"	11'	5'8"	13'10"	6'6"	21'6"	7'4"	34'6"	8'4"	85'	10'7"	INF	13'4"	INF	18'	INF
11	2'2"	3'	2'6"	3'9"	2'10"	4'6"	3'2"	5'6"	3'6"	6'9"	3'9"	7'10"	4'3"	10'3"	4'8"	14'9"	5'1"	20'5"	5'9"	43'9"	6'4"	192'	7'2"	INF	9'	INF	10'3"	INF	12'9"	INF
16	2'1"	3'3"	2'4"	4'2"	2'8"	5'4"	2'11"	6'8"	3'2"	8'	3'5"	10'7"	3'9"	16'	4'2"	27'6"	4'5"	57'6"	4'11"	INF	5'4"	INF	5'10"	INF	6'10"	INF	8'	INF	9'2"	INF
22	1'11"	3'7"	2'1"	4'10"	2'5"	6'8"	2'8"	9'	2'10"	12'	3'1"	17'7"	3'4"	49'	3'7"	INF	3'10"	INF	4'2"	INF	4'5"	INF	4'10"	INF	5'5"	INF	6'	INF	6'10"	INF

The distances are measured from the film plane.

* The depth of field is calculated for a circle of confusion of 1/500 inch.