

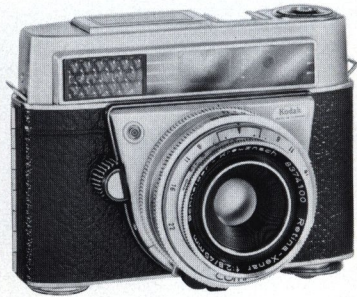
KODAK

RETINA

II F

CAMERA

KODAK RETINA IIF Camera



The precision craftsmanship, performance, and styling of your new KODAK RETINA IIF Camera identify it as a true member of the world-famous RETINA family.

Its built-in transistorized flashholder, choice of automatically or manually controlled exposures, shutter-speed range from 1 second to 1/500 second, coupled rangefinder, and famous Schneider RETINA-Xenar Lens are only a few of its outstanding features.

Before making any important pictures — of a trip or some special event — it is well to shoot a magazine of film outdoors, and indoors with flash. This provides practice in camera operation and a check on your equipment.

PICTURETAKING

with your **KODAK RETINA IIF Camera**
... it's as easy as this!

After setting the speed ring for the speed of the film loaded in the camera, you . . .

1

Select the shutter speed (other than "B").

2

Look through the eyepiece; adjust the exposure-control pointer and range-finder; compose the picture.

3

Press the shutter release to take the picture.

... Read on for the important details of camera operation.

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KODACHROME II Film

For color slides for projection or from which color prints or enlargements can be made. Expose by daylight or *blue* flashbulbs. 20 or 36 exposures.

KODACHROME-X Film

A higher-speed film than KODACHROME II, this film also yields color slides for projection or from which color prints and enlargements can be made. Expose by daylight or *blue* flashbulbs. 20 or 36 exposures.

KODACHROME II Professional Film, Type A

This film is color-balanced for use with photoflood lamps, although, with corrective filters, it can be used otherwise. Provides color slides for projection or from which color prints and enlargements can be made. 36 exposures.

KODAK EKTACHROME-X Film

For color slides for projection or from which color prints and enlargements can be made. You can process this film yourself or have it processed as described below. Expose by daylight or *blue* flashbulbs. 20 or 36 exposures.

KODAK High Speed EKTACHROME Film

This extremely fast film permits excellent color pictures in low illumination. Yields color slides for projection or from which color prints and enlargements can be made. Available in Daylight Type (for exposure in daylight or by *blue* flashbulbs) or Type B (for existing tungsten light). 20 exposures.

KODACOLOR-X Film

A negative color film for color prints, enlargements, or slides (at extra cost). Expose by daylight or *clear* flashbulbs. 20 exposures.

KODAK PANATOMIC-X Film

The film to use for big enlargements when high film speed is not a factor. It combines exceptionally fine grain and the ability to record fine detail. 20 or 36 exposures.

KODAK PLUS-X Pan Film

An excellent high-speed film for general outdoor and interior use. The low graininess and high resolving power permit high-quality enlargements. 20 or 36 exposures.

KODAK TRI-X Pan Film

An extremely fast panchromatic film of moderate contrast, wide exposure and development latitude, and color sensitivity suitable for flash pictures. 20 or 36 exposures.

Note: For special-purpose films, see your Kodak dealer.

Your dealer can arrange to have your Kodak color films processed by Kodak or any other laboratory offering such service. Some laboratories, including Kodak, also provide direct mail service whereby you can mail exposed color films to the laboratory and have them returned directly to you. See your dealer for the special mailing devices required.

FILM SPEEDS

Kodachrome II	25
Kodachrome-X	64
Ektachrome-X	64
High Speed Ektachrome (Daylight)	160
High Speed Ektachrome (Type B)	80††
Kodacolor-X	64
Kodachrome II Professional, Type A	25**

COLOR FILMS

	Daylight	Photoflood
Kodachrome II	25	12*
Kodachrome-X	64	25*
Ektachrome-X	64	25*
High Speed Ektachrome (Daylight)	160	—
High Speed Ektachrome (Type B)	80††	***
Kodacolor-X	64	40†
Kodachrome II Professional, Type A	25**	40

*With Kodak Photoflood Filter No. 80B (for Kodak Daylight Type Color Films).

**With Kodak Wratten Filter No. 85

***125 in existing tungsten light

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

††Kodak Daylight Filter for Type B Color Films, No. 85B

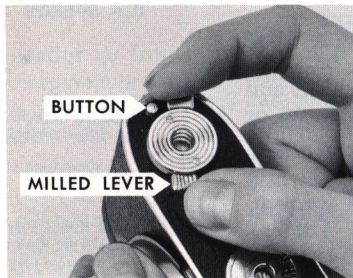
B & W FILMS

Panatomic-X	40
Plus-X Pan	125
Tri-X Pan	400

These film speed numbers apply to either daylight or artificial light.

LOADING

Always
in Subdued
Light



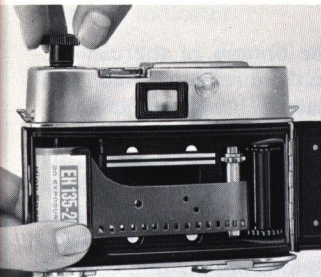
1

To open the back of the camera, rotate the **MILLED LEVER** clockwise; the opposite end of the lever moves in the direction of the arrow and uncovers the opening **BUTTON**. Press this button and the back springs open.



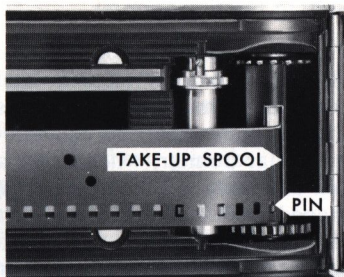
2

Depress the **REWIND KNOB** slightly, and turn it **counterclockwise**. It will then spring up; pull it out (past a slight resistance) as far as it will go.



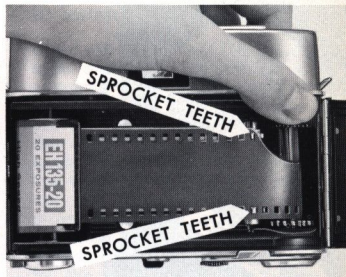
3

Place the film magazine in the recess next to the rewind knob. Push the rewind knob all the way in (rotating it slightly, if necessary) and lock it by turning it clockwise.



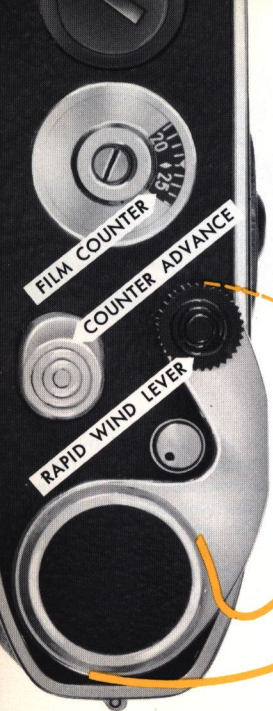
4

Turn the built-in TAKE-UP SPOOL by one of its toothed flanges until the opening in the spool points upward. With the lower edge of the film against the lower take-up spool flange, push the film end protruding from the magazine far enough into this opening (over the white inner core, and underneath the black outer-casing of the spool) to anchor a perforation over the small PIN, as illustrated.



5

Turn the take-up spool by one of its flanges to wind the film, until the SPROCKET TEETH engage the perforations on both sides of the film, as shown in the illustration. Close the back of the camera by pressing the back against the body until it locks.



Setting the film counter

The film counter is located on the bottom of the camera. Slide the film COUNTER ADVANCE in the direction of the FILM COUNTER as many times as necessary to bring the diamond-shaped mark near 36 on the film counter opposite the triangular pointer, when using a 36-exposure magazine. If you are using a 20-exposure magazine, set to the diamond-shaped mark between 20 and 25. Press and release the SHUTTER RELEASE; then swing out fully 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 indicates the number of exposures still available.

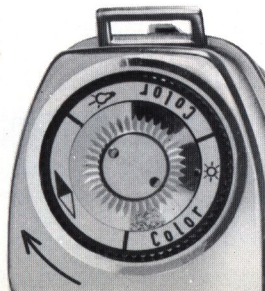
Important: After the film counter reaches "1," a transport lock comes into operation; neither the rapid wind lever nor the SHUTTER RELEASE will then operate. This prevents the film end from being pulled from the magazine.



The film indicator

Set the type of film (black-and-white; color, day-light; color, artificial light) loaded in the camera on the film indicator located on top of the rewind knob. Turn the rewind knob *counterclockwise* and let it spring up (don't pull it up further); grip the knob with two fingers and turn the inner ring with the thumb of the other hand until the dot index points to the type of film in the camera. Press down the knob and turn it *clockwise* to lock it in place. The indicator has no effect on the camera mechanism; it serves as a reminder only.

NOTE: When the rapid wind lever is swung out, the rewind knob should turn counterclockwise. This will provide a check on whether film is advancing properly. Slack must have been taken up in the magazine by turning the rewind knob in the direction of the arrow until resistance is encountered.

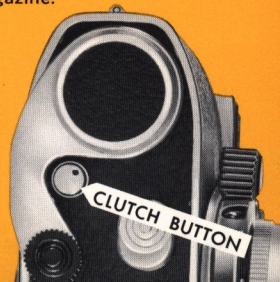


9

UNLOADING

In Subdued Light only

After the 20th or 36th exposure and before the back is opened, rewind the exposed film. First depress the CLUTCH BUTTON in the base of the camera; turn the rewind knob counterclockwise to allow it to spring up (do not pull up); then turn the 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. Give a few more turns to draw the film into the magazine; open the camera back, pull out the rewind knob, and remove the magazine.

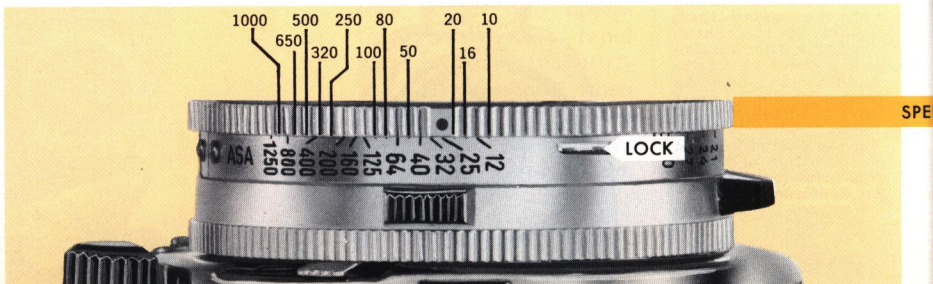


SETTING THE FILM SPEED

Because films differ in their sensitivity to light, a numerical rating is assigned to each film to indicate its sensitivity, or speed. This rating is the Film Speed Number, and must be “keyed” into the exposure control mechanism for proper exposure of a particular film. Film speeds are listed on page 5 and are provided in the instructions packed with the film.

The SPEED RING on the camera is marked (or has “click” settings) for American Standard (ASA) film speeds from 10 to 1250.* To set the film speed number on the camera, press down firmly the speed ring LOCK and revolve the knurled section of the speed ring until the orange index dot on the ring clicks into position at the guideline for the film speed number of the film or at intermediate click settings between marked film speed numbers. Film speeds for unnumbered “click” settings are shown below. In the illustration, a film speed of 25 (KODACHROME II Film, for Daylight) is set on the camera.

*The scale numbered DIN 12 to 30 is for films rated by a European film-speed system.



SELECTING THE SHUTTER SPEED

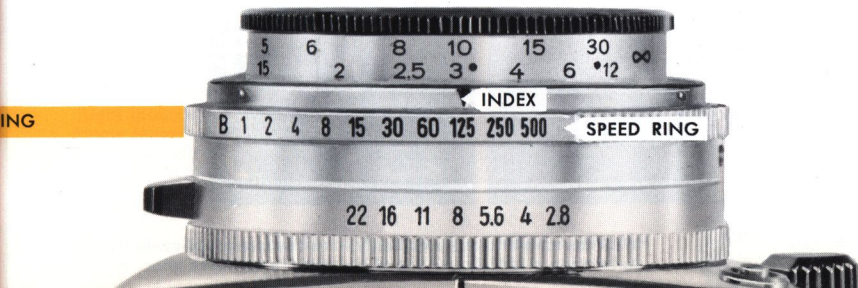
Rotate the knurled section of the SPEED RING until the desired shutter speed is opposite the triangular INDEX. The numbers 2, 4, 8, 15, 30, 60, 125, 250, and 500 represent fractions of a second; for example, 125 is 1/125 second. The number 1 is one full second.

A shutter speed of 1/125 is recommended for general daylight picture-taking; the faster speeds (250 or 500) are useful to minimize the effect of subject or camera movement, while the

slower speeds are used for less favorable light conditions. At speeds less than 1/30 second, the camera should be on a solid support.

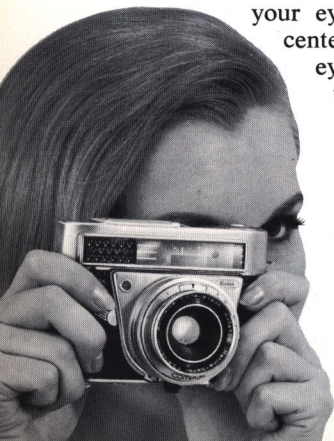
At the "B" setting, the shutter remains open as long as the shutter release is depressed.* *The exposure control mechanism does not function with the shutter set at "B."* Set lens openings by the *f/numbers* on the scale.

*A socket for attaching a cable release is located below the shutter release lever.



The camera can be held either vertically or horizontally, depending on the format of the subject. Select a position, such as shown below (for horizontal pictures), which assures that the camera is held steady and that the *honeycomb cells of the electric eye are not obscured*.

Place the camera close to your eye with the eye centered on the rear eyepiece so that the complete



luminous viewframe in the finder is visible. The image seen within this viewframe will be included in the picture, except at the shorter camera-to-subject distances. To avoid "cutoff," at subject distances between 6 and 3½ feet, the top of the subject (camera held horizontally) must be below an imaginary line drawn between the two parallax indicators, located one on each side near the top of the viewframe (see illustration).* An area equivalent to that eliminated at the top of the viewframe is



*With the camera held vertically, use the two parallax indicators to determine a **side** boundary of the picture at these short distances.

added at the bottom of the picture. **Rangefinder focusing**—As you look through the eyepiece, you will also notice a circular area in the center of the field of view — this is the rangefinder field. Until the camera is focused for the correct camera-to-subject distance, this field shows a double image of the subject. To set the distance correctly, rotate the LENS MOUNT by its knurled rim until the outlines of the double image move together and coincide, so that only one image is visible. The lens is

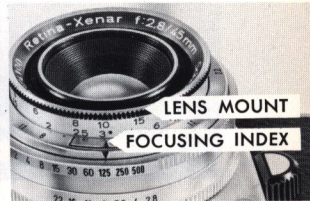
now focused for the film plane*-to-subject distance.

Scale focusing—You can also focus by turning the lens mount until the subject distance in feet (*red figures*) is opposite the triangular FOCUSING INDEX. The black figures on the lens mount show distances in meters.

Zone focusing—The black dot near the red 10 on the focusing scale is the quick setting for Groups; the red dot near the red 30 is the quick setting for Scenes.

Left Illustration:
Double image in
rangefinder indicates
out-of-focus subject.

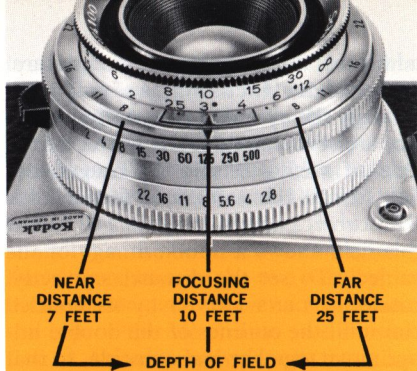
Right Illustration:
Single rangefinder
image means camera
is properly focused.



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

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 range of sharpness is known as "depth of field." The larger the f /number (smaller lens opening), the greater the depth of field at the same distance setting.

To permit instant reading of the depth of field for a lens opening and distance setting, a DEPTH-OF-FIELD scale, composed of numbers corresponding to lens openings, is arranged on either side of the focusing index. The two outside bracket lines, one on each side of the focusing index, indicate the depth of field at $f/4$. The dots on either side of these lines indicate the depths at $f/2.8$ and $f/5.6$, respectively.



Let's use the illustration as an example: The focus is set for 10 feet; if the lens opening scale (f /number) is set at $f/8$, then the depth of field is from about 7 feet to about 25 feet. These distances were found by noting the distance figures (on lens mount) opposite the two figures 8, on either side of the focusing index. At the $f/4$ setting, the depth of field extends from about 8 feet to 15 feet. Read depth of field for other lens openings similarly.

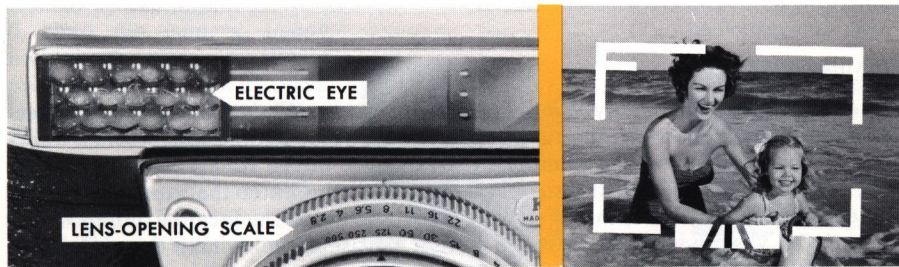
SETTING THE EXPOSURE CONTROL

The **ELECTRIC EYE** on the front of the camera measures light reflected by the subject. Make sure that the electric eye is not obstructed during picturetaking by a finger or other object, or pointed toward the sun or other unusually bright light source.

Look through the viewfinder eyepiece and note the two diagonal bars, located in the base of the luminous

viewframe. Rotate the **LENS-OPENING SCALE** by one of its black handles until the exposure pointer is precisely centered between the bars, as shown below. The exposure is now correctly set for pictures of average subjects under average lighting conditions. For unusual situations, see page 16.

If you cannot center the pointer, even by rotating the lens-opening scale



over its full range, under normal lighting conditions the pointer can be centered by changing the preset shutter speed slightly.

Note: If the pointer does not seem to follow the back and forth rotation of the lens-opening scale and you cannot center the pointer because of a sudden jumping of the needle, this indicates that the shutter speed is *far outside* the

exposure-control limits as your camera is presently set. *If the speed of the film loaded in the camera is suitable for the prevailing light conditions*, you can center the pointer after changing to a compatible shutter speed.

Under extremely poor lighting conditions, either flash or a timed "B" exposure with the lens-opening set by scale may be useful.

Unusual Situations

The electric eye reads the *over-all* brightness of a scene. When there are large differences in brightness between the subject and the background, *and it is possible to get close to the subject*, you can minimize the influence of the background by moving closer, to a point at which the subject fills the finder. Center the exposure pointer between the diagonal bars; then step back to the picturetaking location, compose the scene in the viewfinder, and press the shutter release down to take the picture. In this way, the subject, the part of the scene in which you are most interested, will be properly exposed.

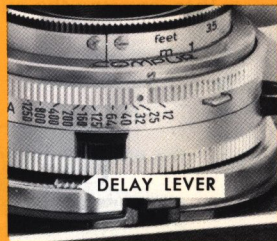
1. Set the speed ring for the film speed number of the film loaded in the camera, as described on page 10.
2. Select the shutter speed. For general picturetaking, the shutter-speed setting may be left at "125."
3. Focus the camera for the camera-to-subject distance by using the rangefinder, dot symbols, or footage scale.
4. Set the exposure control by centering the exposure pointer between the two diagonal bars in the base of the luminous frame of the viewfinder.
5. Compose the picture with your eye close to the rear eyepiece of the viewfinder so that the subject is properly framed by the luminous viewframe.
6. Hold the camera *steady* and take the picture by slowly pressing the SHUTTER RELEASE all the way down.
7. Swing out the rapid-wind lever in one movement *to the limit of its travel*; then allow it to return to its original position.* This sets the shutter and advances film for the next exposure.



*If it does not return, you did not swing it out far enough.

The Self-Timer

If you wish to include yourself in a picture (daylight or flash), first operate the rapid-wind lever; then push the DELAY LEVER toward the shutter release as far as it will go. Press the shutter release to start the delay mechanism; the shutter will go off after about 10 seconds, thus allowing sufficient time for you to take your place in the picture. Once the delay lever has been set, it must be returned only by making an exposure. Do not force the lever.



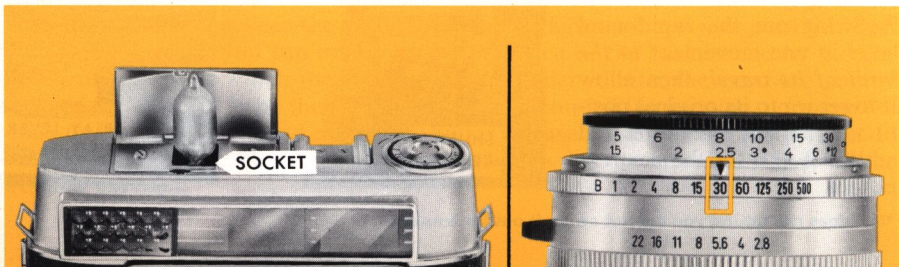
Your camera features easy flash picturemaking. Merely slide the round button, located on the back of the camera next to the viewfinder eyepiece, toward the eyepiece — the flash cover and reflector will spring up into position for flash pictures.

1. Flashbulbs—Insert an AG-1 or AG-1B bulb (depending on film — see film instruction sheet) in the flash SOCKET by first orienting the base of the bulb so that its narrow edge is toward the front or back of the camera, then pressing the bulb straight down in

the socket as far as it will go. Eject the used bulbs by sliding the round button on the back of the camera toward the eyepiece. *Never take flash pictures in an explosive atmosphere.*

2. Shutter Speed—Rotate the knurled section of the shutter speed ring until 30 (1/30 sec.) is at the triangular index. *Flashbulbs are synchronized at speeds of 1/30 second and slower, only.*

3. Focus—Determine the camera-to-subject distance with the built-in rangefinder (or estimate) and note the distance opposite the focusing index.



4. Lens Opening—From the Flash Guide Number table, opposite, select the proper flash guide number for the film you are using; divide this number by the camera-to-subject distance in feet (found in step 3) to find the nearest lens-opening number. Rotate the lens-opening scale by its black handles until this number is opposite the index mark. For example, if KODACHROME-X Film were loaded in the camera,

$$\frac{50 \text{ (Guide No.)}}{8 \text{ (Subject Distance)}} = 6.3; \text{ use } f/5.6.$$

5. Flashguard—Since bulbs may shatter when flashed, use of the plastic flash-guard, supplied, is recommended. With the KODAK label up, slide the two inside rails down over the flash cover edges until seated with the bulb enclosed. Remove flashguard to eject bulb.

6. Taking Pictures—Compose the picture and slowly press the shutter release to flash the bulb and take the picture.

A socket is provided on the front plate of the camera for attaching an alternate flash source, such as electronic flash (shutter speeds to 1/500 sec.). The built-in flashholder then becomes inoperative.

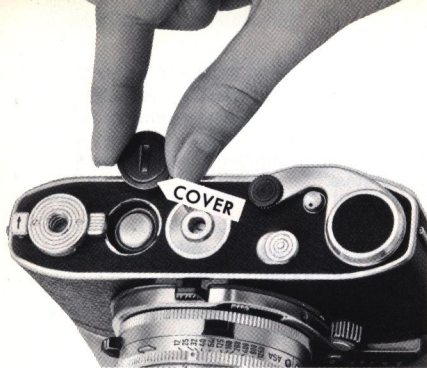
Flash Exposure Guide Numbers* for KODAK RETINA IIF Cameras

(Shutter Speed set at 1/30 second; flashbulb-type, as noted)

FILM	AG-1 (Clear)	FILM	AG-1B (Blue)
KODACOLOR-X	55	KODACHROME II	30
PANATOMIC-X	50	H. S. EKTACHROME	75
PLUS-X Pan	90	KODACHROME-X	50
TRI-X Pan	160	EKTACHROME-X	50

*Based on exposures in average-sized rooms with medium-light colored walls.

NOTE: Do not store camera with bulb in socket; this would drain battery.



Battery—The life of the battery, supplied, is approximately two years.* To replace the battery, turn the coin-slotted battery COVER counterclockwise, move the milled lever aside, and remove the cover. Remove the used battery and replace it with a PX-13 type mercury battery, inserted with its *positive side (+) toward the inside*. Replace and fasten the cover by turning it clockwise.

*With average use.

These specially designed photo aids offer convenience and extend the picture-taking scope of your RETINA Camera. See your Kodak dealer for these and additional photo aids.

KODAK RETINA Field Case, Model D

A top-grain brown leather, plush-lined case of stitchless construction with chrome-finished metal trim and reinforcements. The front pivots and is removable. Adjustable neck strap.

KODAK Adapter Ring 629A

This screw-in adapter permits use of Series 6 KODAK Filters and other units of the KODAK Combination Lens Attachments.

KODAK RETINA Filters

Filters for both color and black-and-white films are available in screw-in mounts for your camera. The RETINA-Xenar f/2.8, 45mm Lens requires RETINA Filters of 32mm.

KODAK RETINA Camera Platform, Model C

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 RETINA 32 Lens Hood

This flexible cone-shaped hood with threaded metal attaching ring provides excellent protection from extraneous light. The flexible portion of the hood can be easily rolled back to allow the combination to fit into the case.

KODAK RETINA Close Range and Viewfinder Kit, Model C

This kit is used for optically measuring film-to-subject distances ($37\frac{3}{8}$ to $12\frac{1}{4}$ inches), and for determining the field covered by the 45mm, f/2.8 lens, supplemented by the N1, N2, or combination of the N1 and N2 auxiliary lenses.

KODAK RETINA Close-Up Kit, Model C

This kit measures close distances (11 to $7\frac{1}{2}$ inches) and the field sizes, mechanically, at three settings by means of field guides. For use, the kit requires the KODAK RETINA Camera Platform, Model C.

KODAK RETINA Microscope Adapter Kit, Model D

Photomicrographs can be made easily and quickly with this outfit. Fits practically all microscopes — eyepiece diameter: 1 inch.

Your KODAK RETINA IIF Camera is a fine, ruggedly built camera, but yet a precision instrument. Protect it from dust and dirt and avoid rough handling. Use a rubber syringe to blow out any dust that may accumulate inside the camera. If the lens needs cleaning, first brush or blow away any grit or dust, then wipe the surface gently with KODAK Lens Cleaning Paper. If necessary, use KODAK Lens Cleaner.

Do not attempt to make any repairs or remove any parts from the shutter, lens or camera. Never oil the shutter or any other parts of the camera. If you find that the camera requires service, be guided by the information on page 22.

SERVICE FACILITIES

If your Kodak camera should require attention, complete service facilities are provided at Rochester and in Kodak Regional Sales Divisions at the addresses below. Also, service, covered under the guarantee, is available through independent service shops in many cities. For such local, guarantee-covered service, please see your Kodak dealer or refer to the yellow pages of your telephone directory under Photographic Equipment and Supplies – Factory Approved Warranty Service.

Eastman Kodak Company
Apparatus Service
343 State Street
Rochester, New York 14650

Eastman Kodak Company
Apparatus Service
5315 Peachtree
Industrial Blvd.
Chamblee, Georgia 30005

Eastman Kodak Company
Apparatus Service
1901 West 22nd Street
Oak Brook, Illinois 60523

Eastman Kodak Company
Apparatus Service
3250 Van Ness Avenue
San Francisco, California 94119

Eastman Kodak Company
Apparatus Service
808 Rivera Road
Whittier, California 90606

Eastman Kodak Company
Apparatus Service
1065 Kapiolani Blvd.
Honolulu, Hawaii 96807

Eastman Kodak Company
Apparatus Service
6300 Cedar Springs Road
Dallas, Texas 75235

Eastman Kodak Company
Apparatus Service
1334 York Avenue
New York, New York 10021

Film

Film Load—KODAK 135, 20- or 36-exposure magazines

Negative Size—24mm x 36mm

Lens

RETINA-Xenar f/2.8, 45mm

Lens Openings — marked f/2.8, f/4, f/5.6, f/8, f/11, f/16, f/22

Exposure Control

- Automatic for preset shutter speeds by centering needle in finder
- Film speed settings ASA 10 to 1250

Shutter

Compur—automatically cocked when film is advanced

Speeds—1 sec, 1/2 sec, 1/4 sec, 1/8 sec, 1/25 sec, 1/30 sec, 1/60 sec, 1/125 sec, 1/250 sec, 1/500 sec, and "B"; built-in self-timer

Focusing and Viewing

Coupled Rangefinder — Superimposed-image type combined with viewfinder

Focusing Range—3½ feet to infinity; Zone focusing for Groups and Scenes

Viewfinder—Projected luminous viewframe-type

Flash

- Accepts AG-1 type flashbulbs
- Shutter synchronization up to 1/30 second for bulbs; up to 1/500 for electronic flash
- Uses one PX-13 type mercury battery
- Alternate flash socket on front plate of camera

Other Features

- Shoe bracket for mounting accessories
- Automatic double-exposure prevention
- Tripod socket
- Eyelets for carrying strap
- Die-cast metal body, black covering
- Cable release socket

GUARANTEE

Within a year after purchase, any repairs necessary to this KODAK RETINA IIF Camera — *bearing a serial number with "EK" prefix* — due to a defect in materials or workmanship will be made or, at our option, the camera will be replaced without charge, provided the camera has not been altered, modified, or disassembled in any manner. No other warranty or guarantee, express or implied, shall be applicable to this equipment. Nor are we responsible for loss of film, for other expenses or inconvenience, or for any consequential damages occasioned by the equipment.

In case of unsatisfactory operation, the camera should be sent directly or through a Kodak dealer to Eastman Kodak Company or a repair firm authorized by us to make such repairs.* It should be accompanied by a description of the trouble encountered and other available information regarding the camera, including the date and place of purchase.

*Kodak service facilities with addresses are described on page 22.

EASTMAN KODAK COMPANY, Rochester, N. Y. 14650