

**Kodak**  
C A M E R A

*Retina* automatic III

**Dear Photo Fan,**

In your RETINA automatic III  
you own a fully automatic miniature camera.  
You can select any shutter speed you wish right  
up to the top speed of  $1/500$  second.

You can take rapid action sports pictures  
just as easily as lifelike snapshots.

The fully automatic mechanism of your  
RETINA automatic III will always select the correct  
lens opening for the pre-set shutter speed.

Your RETINA automatic III just will not allow  
you to make any mistake in exposure.

The exposure release "thinks" for you and locks itself  
when the light is too poor for taking a picture.  
This is indicated by a STOP signal in the finder.

Focusing with the coupled rangefinder  
of your RETINA automatic III is an easy matter  
of seconds.

And what you own is not just  
"any" automatic camera. It is the RETINA automatic III  
and this means all that is best in camera design  
and offers the utmost in precision,  
reliability and beauty.

# **It is easy to take pictures with your RETINA automatic III!**

## **Set the shutter speed**

Turn the shutter speed ring until the required shutter speed is opposite the letter A and the setting index.

## **Focus**

Move the outlines of the double image in the bright rangefinder field together to coincide.

## **Sight and shoot**

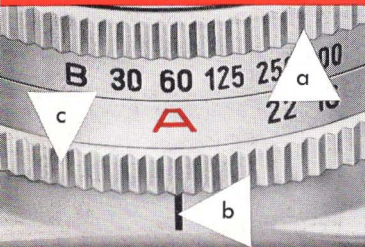
Compose your subject inside the luminous view-frame of the large-image viewfinder and slowly depress the exposure release. (Turn to page 7 for details on the appearance of the STOP signal in the finder.)

## Setting the shutter speed

For fully automatic picture-taking with your RETINA automatic III you can use all shutter speeds from  $\frac{1}{30}$  second up to  $\frac{1}{500}$  second. The figures 30, 60, 125, 250, and 500 on the shutter speed ring (a) are fractions of a second. Turn the shutter speed ring until the required shutter speed,  $\frac{1}{60}$  second, for instance, is opposite the letter "A" (automatic) and the setting index (b).

Use faster shutter speeds ( $\frac{1}{250}$  or  $\frac{1}{500}$  second) for fast moving subjects as in sports events. (B is the shutter setting for time exposures.)

If the letter "A" should happen not to be opposite the setting index, just turn the lens opening ring (c) until "A" clicks in place opposite the setting mark.



## Focusing

Look through the eyepiece of the large-image finder and you will see the subject outlined by the luminous view-frame. In the center of the field of view you will also notice a round rangefinder field. Until the camera is focused for the correct distance, this field shows a double image of the subject. Turn the focusing knob (d) until the outlines of the double image move together and coincide. The lens is now accurately set for the film plane-to-subject distance.

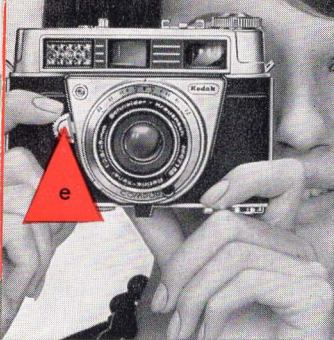
Your RETINA automatic III also lets you use the two snapshot zone focus settings. See details on page 15.

Lower picture: Subject in sharp focus.

Middle picture: Subject still out of focus.







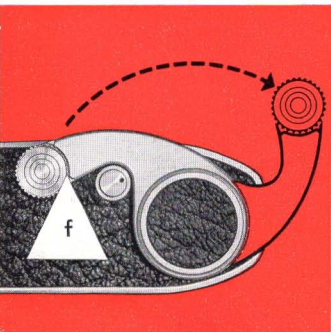
## Sight and shoot

The reflected brilliant frame indicates the field area and prevents faulty viewing. You can hold the camera either horizontally or vertically.

When sighting a picture take special care not to get your fingers in front of the honeycomb cell window of the exposure meter.

When you have your subject nicely in the finder **slowly** press the release key (e). Naturally, the shutter has to be set by means of the rapid wind lever (f) before it can be released.

It is advisable to operate the rapid wind lever (f) immediately a picture has been taken. Your camera will then always be ready for action.

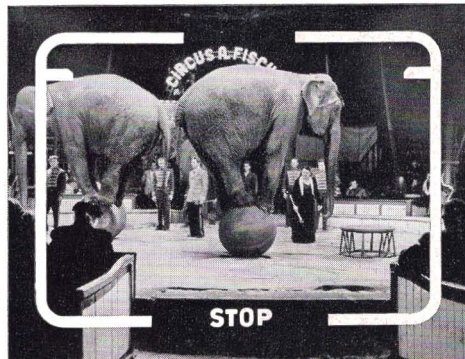


If you use the built-in exposure meter in the normal way when photographing subjects which are strongly back-lit or which include a very bright area such as a lamp, you may get a false reading and an underexposed picture. For subjects such as these you should aim the camera first at a dark part of the subject, press the release slowly until the first resistance is felt, and while still holding down the release button, re-sight the camera on the subject. Only then should the release button be fully depressed to make the exposure.

## Preventing under-exposure

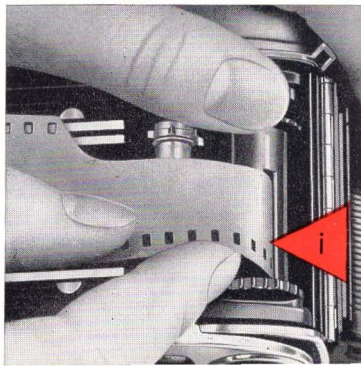
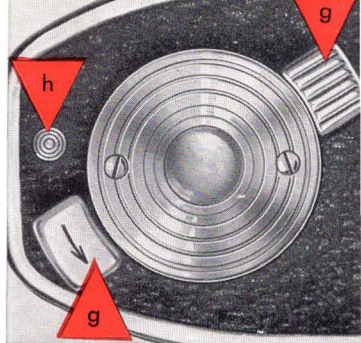
If there is not enough light to take pictures at a selected shutter speed with the type of film in the camera, your RETINA automatic III will indicate this by the appearance of a STOP signal in the viewfinder and the body release will lock. If this happens you must change the shutter speed to a slower one or, if  $1/30$  is already set, you can take such a photograph only with flashlight. See hints on page 16.

**Large image viewfinder  
with reflected brilliant  
frame and STOP signal.**



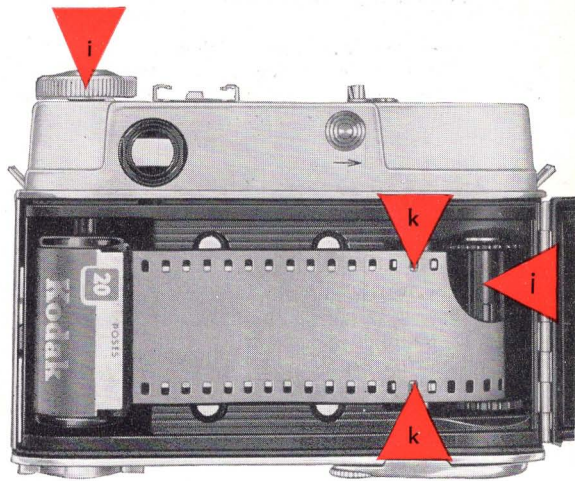
## Loading the film

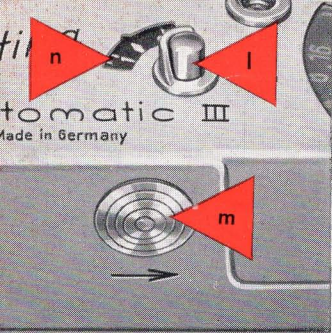
1. Always load your RETINA automatic III in the shade or at least in the shadow of your body.
2. To open the back of the camera, press the milled lever (g) clockwise; the opposite end of the lever then uncovers the opening button (h). Press this button and the back springs open.
3. Pull the rewind knob (i) out as far as it will go.
4. Insert the magazine in the supply chamber with the protruding end of the film pointing towards the built-in take-up spool (j).
5. Turn the take-up spool by its flange until a slot points upward.
6. With the lower edge of the film against the lower take-up spool flange push the trimmed end of the film into this slot so that the tooth at one side of the slot engages a perforation of the film.
7. Pull the film over the film track and turn the take-up spool by its flange until the teeth of the sprocket (k) engage the perforations **on both sides**.
8. Close the back of the camera, by pressing the back against the body until you hear it lock.
9. Push back the rewind knob (i) to its normal position and turn it in the direction of the arrow until a slight resistance is felt. This takes up the slack film inside the magazine.





- g** Milled lever
- h** Opening button
- i** Rewind knob
- i** Built-in take-up spool
- k** Film transport sprocket





## Having loaded the camera, remember to

- Set the film counter
- Set the film speed
- Set the film indicator

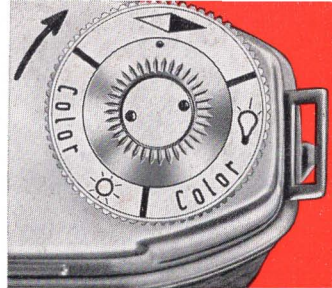
## This is how to set the film counter

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

Press and hold down the film release button (l); then, at the same time, press the film counter advance (m) in the direction of the arrow as many times as necessary to bring the diamond-shaped  $\blacklozenge$ -mark (between 1 and 36) opposite the notch in the upper edge of the film counter window (n). When using a 20-exposure magazine set to the diamond  $\blacklozenge$ -mark near 23.

Operate the rapid wind lever now to the limit of its travel. Press the film release button (l); then swing out and release the rapid wind lever again. Repeat this as often as required to bring the film counter to 36 or 20, depending on the number of exposures in your magazine.

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



### Very important: the film speed

The speed rating of the film in your RETINA automatic III is a most important factor in obtaining correctly exposed pictures. You must therefore set the film speed scale of the shutter speed ring with particular care. ASA speeds are engraved in red on this scale.

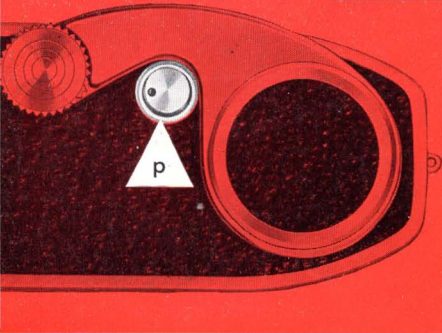
To set, press down the lever (o) and turn the shutter speed ring (d) until the red dot is opposite the required ASA or DIN figure, as for instance 50 ASA.

### The film indicator - a useful memory aid

The rewind knob is provided with an indicator to remind you of the type of film you have loaded in your camera. To set the indicator dial turn the inner milled ring until the black dot is opposite the symbol for the type of film in the camera.

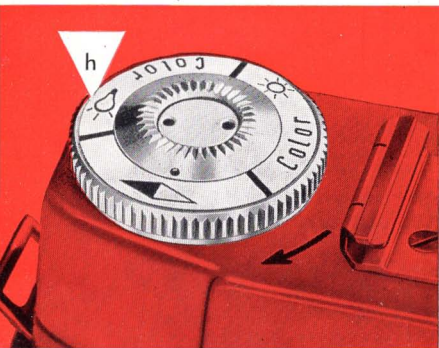
-  = black-and-white film
- Color  = daylight colour film
- Color  = artificial light colour film

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



## When your film reaches the end

After the last exposure the film must be rewound into its magazine. To do this, press the clutch button (p) in the camera base and turn the rewind knob (h) in the direction of the arrow until the clutch button ceases to rotate. (Watch the black dot on the clutch button.) Then open the camera back **in subdued light**, pull out the rewind knob, and remove the magazine.



If you forgot to set the film counter, it may happen that you reach a point where the rapid wind lever cannot be pulled all the way out. This indicates that the film is now finished. Press the clutch button to allow you to complete the winding operation. Rewind the film and unload as described above.

## Films for colour

**Kodacolor Film:** Makes colour negatives, which are then printed on paper to provide natural-colour prints. Faster than Kodachrome Film, it allows good pictures in lighting hitherto considered unsuitable for colour photography (ASA 32 — BS 26°).

**Kodachrome Film:** There are two kinds — Daylight Type, and for Photoflood light, Type A. Both give miniature colour slides at no extra processing charge, from which prints and enlargements in colour or black-and-white can be made subsequently. Can be used with flash (ASA 10 — BS 21°).

**Ektachrome Film:** Intermediate in speed, gives similar results to Kodachrome Film but can be processed at home. It is sold at prices not including processing. In Britain it is available only as a daylight type film. Can be used for flash (ASA 32 — BS 26°).

**High-Speed Ektachrome:** Very high speed reversal colour film for exposure in daylight, especially useful for dull-light sports and action photography. Primarily for processing by user (ASA 160 — BS 33°).

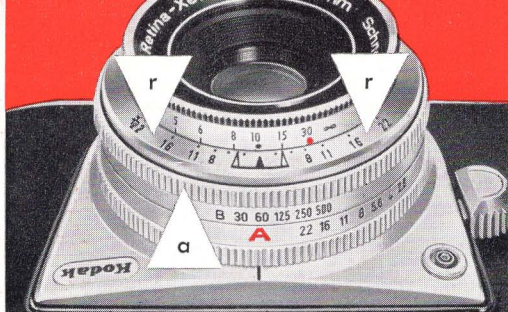
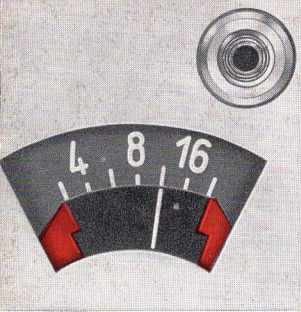
## Films for black-and-white

**Plus-X Pan Film:** An excellent film for both daylight and artificial light photography. Fast but fine-grain emulsion ensures negatives from which big enlargements can be made (ASA 160 — BS 33°).

**Panatomic-X Film:** A high-definition panchromatic film giving exceptional image sharpness by virtue of its thin coating, very fine grain, and freedom from halation and light-scatter. Ideal for negatives permitting a high degree of enlargement, especially when developed in Kodak High Definition Developer (ASA 40 — BS 27°).

**Tri-X Pan Film:** A panchromatic film of very high speed. It is ideal for snapshots in very poor light outdoors, for flash-snaps in large rooms, for taking pictures by Photoflood light, and for “available-light” photography (ASA 400 — BS 37°).





## How to read the depth of field

The depth of field is indicated between the arrows engraved in the front of the shutter. These arrows are the depth-of-field limits at a lens opening of  $f/4$ . The depth of field increases beyond these arrows with every smaller lens opening down to  $f/22$ .

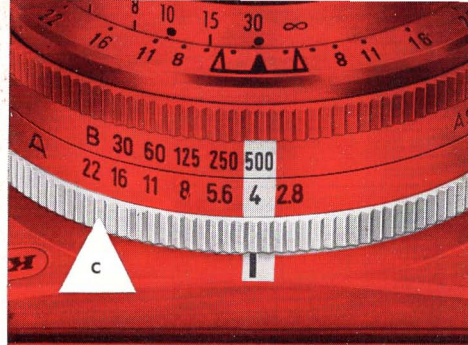
Aim your camera at the subject and look straight down on the needle of the exposure meter (see illustration above left). The needle indicates the automatically set lens opening, say  $f/11$ .

With the distance set to 10 ft. you can read off about 6 ft. at the left and approx. inf. ( $\infty$ ) at the right against the two figures 11 on the depth-of-field scale (r). Everything will be sharp within this range.

If you want to shoot with an even greater depth of field change the automatically set lens opening by turning the shutter speed ring (a) until the needle of the exposure meter points at the figure 16, for instance. The relevant shutter speed is automatically set at A. (The divisions without figures identify, from left to right: f/2.8 — f/5.6 — f/11 — f/22.)

Remember that pictures can only be taken where the needle deflection remains inside the two red areas which are the limits of the exposure meter measuring range.

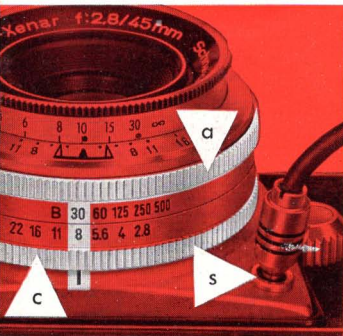
To take full advantage of the existing depth of field for snapshots turn the focusing scale to the black dot near 10 ft. for subjects at close range or to the red dot near 30 ft. for remote subjects.



## **Taking pictures without automatic exposure control**

To the advanced amateur the RETINA automatic III offers still more picture-taking possibilities. For intentional under or over-exposures set the required lens opening by turning the lens opening ring (c). In the example above we have set a shutter speed of  $1/500$  second and an aperture of f/4. You can now take pictures without the auto-control.

## Flash pictures with the RETINA automatic III



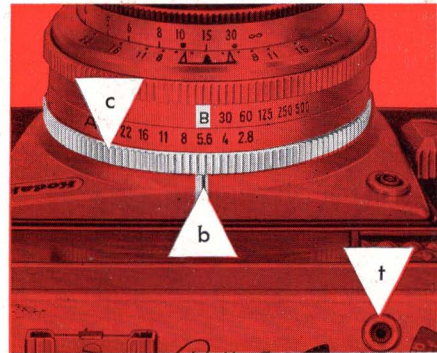
Slide your flash gun, the KODABLITZ, for instance, into the accessory shoe of your camera, plug the flash cable into the flash socket (s), and set the required distance. For flash shots with flashbulbs turn the shutter speed ring (a) to  $1/30$  second. In conjunction with electronic flash any shutter speed from  $1/30$  up to  $1/500$  sec. may be used. Your RETINA automatic III always operates in the X synchronizer position. The lens opening is dependent on the guide number of the flash bulb or electronic flash unit used and also upon the distance. The guide number is specified on the packages of the flash bulbs and in the operating instructions of electronic flash units. The following rule applies:

**guide number divided by distance = lens opening.**

If, for instance, your guide number is 96 and your distance 12 ft., 96 divided by 12 is 8. This means that you have to turn the lens opening ring (c) until the figure 8 on the lens opening ring is opposite the setting mark. The automatic control is now disengaged and you are ready to shoot.

## Time exposures are possible too

For time exposures turn the shutter speed ring until the letter B is opposite the setting mark (b). You will feel a slight resistance between  $\frac{1}{30}$  sec. and B. The automatic exposure control is now disengaged. Then set the required lens opening by turning the lens opening ring (c). The shutter will remain open for as long as the exposure release is depressed. Such pictures should be taken on a tripod and with a cable release which screws into the socket (t).



## Close-ups between 3 and 8 feet



When taking pictures of subjects between 3 and 8 feet the field of view outlined by the luminous frame in the large-image viewfinder does not show what will actually appear in the final picture because the finder and lens are spaced an inch or so apart, and this is called parallax. To compensate for such parallax at a distance of 3 ft. the subject must be seen within imaginary lines, drawn between the two opposite pointers near the top of the view-frame and the opposite side of the view-frame (dotted in the illustration). With subjects farther away than 3 feet the error decreases, and beyond 8 feet you don't need to worry at all.



## **Changing partly exposed films**

If you have to change a film that you have only partly exposed, first rewind that film into the magazine (page 12). Rewind only as long as the clutch button rotates, then stop. This will leave the trimmed film leader outside the magazine. Remove the film from the camera and mark on the magazine the number read off the film counter. When reloading the partly exposed film at a later date, first load it in the usual way and set the film counter to the diamond, then operate the rapid wind lever with the film release button depressed until the number that you have marked on the film magazine reappears in the film counter window.

## **Eyesight correction**

If you use spectacles but do not wear them while taking pictures and so cannot see the finder image clearly, you can order a special correction lens for your photo dealer. This lens screws into the finder eyepiece mount. When ordering please state the exact power required in diopres + or —. No correction lenses can be supplied for correcting astigmatism.

## **Care of the camera**

Protect your lens against damage and avoid finger prints on the lens surface and the finder windows. For cleaning the outer glass surfaces preferably use a soft sable brush or special lens tissues. From time to time also dust the film track and supply chamber with a brush.

## Use filters for better pictures

Filters are used with black-and-white film to obtain correct tone rendering and for special effects.

With colour films, used in a camera as the RETINA automatic, filters are used to change the colour of the light to suit the particular colour film in use.

Most filters have what is called a filter factor. This is the factor by which the exposure must be increased to compensate for the light absorbed by the filter.

With the RETINA automatic III, this is best allowed for by reducing the film speed setting as follows:

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

### Kodak filters for black-and-white film

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 1/2

The above filters must NEVER be used with colour films.

### Kodak Wratten filters for colour films

Wratten No. 1 A Skylight (ultra-violet) .....	0
Wratten No. 85 (amber) for use with Kodachrome Film Type A for daylight exposures .....	1/2
Wratten No. 85 B (amber) for use with Ektachrome Film Type B for daylight exposures .....	1/2
Wratten No. 85 C (amber) for use with Ektachrome Film Type F and Kodachrome Film Type F for daylight exposures .....	1/2
Wratten No. 80 B (light blue) for use with Kodachrome and Ektachrome Films, Daylight Type for Photoflood exposures .....	1
Kodak Pola Screen for reflection control and sky darkening with colour film .....	1 1/2

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

## Example

You want to use a yellow-green filter (F III) for a shot on black-and-white film. On the film speed scale you have set, for instance, 50 ASA. The table on the preceding page indicates that the film speed setting must be reduced by 1 division if a yellow-green filter is used. Your new setting on the ASA scale therefore becomes 25 ASA (see illustration).

When the filter is removed again, remember also to reset the film speed accordingly — in our example back to 50 ASA.



## Depth of Field Table (Sharp Zones\* in Feet)

Aperture	Depth	At distance setting in feet								
		3,5	4	5	6	8	10	15	30	$\infty$
2,8	from	3'1"	3'8"	4'7"	5'6"	7'	8'3"	12'9"	19'8"	48'
	to	3'7"	4'3"	5'5"	6'10"	9'7"	12'5"	22'8"	108'	$\infty$
4	from	3'	3'7"	4'5"	5'3"	6'5"	7'11"	11'6"	16'8"	32'10"
	to	3'9"	4'5"	5'9"	7'3"	10'5"	14'6"	30'	$\infty$	$\infty$
5,6	from	2'11"	3'6"	4'3"	5'	6'2"	7'2"	9'10"	14'1"	24'2"
	to	3'11"	4'7"	6'	7'11"	12'	16'5"	40'	$\infty$	$\infty$
8	from	2'9"	3'3"	4'	4'8"	5'9"	6'6"	8'4"	11'9"	16'8"
	to	4'3"	5'	6'7"	8'10"	14'11"	23'	160'	$\infty$	$\infty$
11	from	2'7"	3'	3'8"	4'4"	5'2"	5'10"	7'5"	9'2"	12'6"
	to	4'7"	5'6"	7'11"	11'1"	23'5"	50'	$\infty$	$\infty$	$\infty$
16	from	2'5"	2'8"	3'4"	3'8"	4'4"	4'10"	5'6"	7'	8'3"
	to	5'6"	6'8"	11'1"	20'	155"	$\infty$	$\infty$	$\infty$	$\infty$
22	from	2'2"	2'5"	2'9"	3'4"	3'7"	4'	4'7"	5'4"	6'2"
	to	7'1"	10'	24'2"	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$	$\infty$

\* Distances are measured from the film plane.

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

## Your accessories for the RETINA automatic III

The **lens hood** should be part of your standard outfit. There is a practical leather case available to take the lens hood plus three filters.

The **close-up rangefinder** (the model marked f/45), used with the N I, N II, and N III a close-up lenses, permits near shots between  $38\frac{1}{4}$  and 12 inches (97 to 30 cm). It shows the exact field of view, free from parallax.

The **close-up attachment**, used with the three R close-up lenses, covers the range between 11 and 6 inches (28.5 and 18.5 cm). A practical attachment for close-up photography.

With the **sports finder model b** you can follow fast moving subjects more conveniently. It is particularly suitable for sports shots and such subjects as children and animals at play.

The **right-angle finder** permits viewing at 90 degrees to the shooting direction. It fits over the viewfinder eyepiece mount.

The **table stand** provides a specially steady camera support for subjects requiring long exposure times. It is particularly versatile when used with a close-up rangefinder and the close-up attachment.

The **copying outfit** with supplementary lighting unit is an ideal accessory for copying documents, prints, books, etc.  $5\frac{7}{8} \times 8\frac{1}{2}$  and  $8\frac{1}{2} \times 11\frac{3}{4}$  inches in size.

The **micro adapter** fits all microscopes with a drawtube diameter of 1 inch (25 mm). Indispensable for scientists, engineers, schools.



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