



PICTURE TAKING WITH THE



KODAK VIGILANT SIX-20

Flash Kodamatic Shutter • Kodak Anstom f/4.5 Lens

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PICTURE TAKING WITH THE

Kodak Vigilant

SIX-20

• The ability of the Kodak Vigilant to make good pictures . . . outdoors or indoors . . . day or night . . . winter or summer, enables your picture-taking activities to be as simple or as varied as you care to make them.

The instructions in this manual give you the essentials of camera operation. Read them carefully because good pictures depend upon a clear understanding of these principles.

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GETTING SET

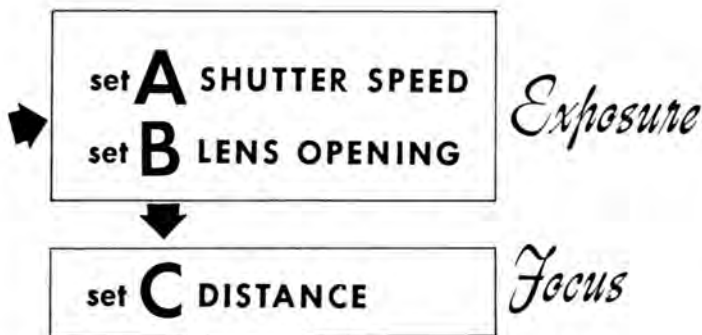
for pictures



**Opening and closing
the camera**

To open the camera, press this button and pull down the front until it locks. The lens is now in a picture-taking position.

To close the camera, press the same button and push up the front.



Correct EXPOSURE gets the picture.
Accurate FOCUS makes it sharp.





SHUTTER SPEED

The length of time the light is permitted to reach the film is controlled by rotating the knurled collar A. The Flash Kodamatic Shutter is designed for making exposures of $1/200$, $1/100$, $1/50$, $1/25$, and $1/10$ second as well as "B" and "T" exposures. The "B" and "T" settings enable you to keep the shutter open for longer exposures. The use of these settings is described on page 17.

The camera may be held in the hands for exposures of $1/200$ to $1/25$ second. Note that each of these shutter settings gives an exposure time twice as long as the one directly preceding it. For example, at $1/100$ second twice as much light reaches the film as at $1/200$ second.

For $1/10$ second or "B" and "T" exposures, the camera must be on a tripod or other firm support.

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B

LENS OPENINGS

Moving the lever B across the f -number scale changes the size of the lens opening through which the light passes while the shutter is open.

The opening is smallest when the lever is at $f/32$. Each succeeding setting admits, in a given exposure time, twice as much light as the one before; for example, $f/22$ lets through twice the light of $f/32$, $f/16$ twice that of $f/22$, and so on along the scale.*

*The setting $f/4.5$ is not a full lens opening larger than $f/5.6$, and admits only 50% more light.





Lens Opening and Shutter Speed work together to admit the right amount of light to the film. The correct combination of these settings for various lighting conditions and types of subjects can be obtained from the Snapshot Kodaguide packed with the camera, or from the table on page 22.



FOCUS



The lens must be focused for the distance between the camera and the subject. To focus, turn the Lens Mount until the figure under the index pin **C** indicates the number of feet from lens to subject.

The engraved focusing scale is marked from $3\frac{1}{2}$ feet to INF (infinity). Use the infinity setting for distances 100 feet from the camera or beyond.

For subjects closer to the camera than 10 feet, be sure to *measure* the distance or use a Kodak Service Range Finder.

The Finders

1—The Waist Level Finder enables you, without stooping, to make pictures of children and other subjects below normal height. For horizontal pictures turn the finder and camera to the side.

2—The Eye Level Finder is better for action pictures. To bring the finder into position, lift the front finder frame. To aim the camera properly, look through the finder, holding the camera firmly against the face with the rear finder sight close enough to the eye to enable you to superimpose its edges upon the edges of the front finder frame.

When using the eye level finder, always rotate the adjustment dial on the rear sight until the arrow is pointing to approximately the same distance for which the lens is focused. This changes the position of the rear sight so that the field of view seen in the finder is the same as that covered by the camera lens.



Kodak Films



Kodak Verichrome Film

The film for general outdoor pictures. It has wide latitude to help you get a good negative even though you slightly misjudge the exposure. High in speed, it is also excellent for night photography with Photo-flash Lamps. 8 exposures, V620.



Kodak Plus-X Panchromatic Film

Combined high speed and fine grain make this film ideal for outdoor work and for well-lighted indoor subjects. 8 exposures, PX620.



Kodak Super-XX Panchromatic Film

Because of its very high speed, this film is the logical choice for making snapshots indoors with Photoflood Lamps. Indoors or out, it is the film to use when the light is poor. 8 exposures, XX620.

Use Kodak Film No. 620

Kodacolor Film

The film for full-color prints—exposed in bright sunlight or by blue-bulb Photoflash, Kodacolor Film yields negatives from which Kodacolor Prints (inside front cover) are made. Kodacolor Prints are ordered through your Kodak dealer. Black-and-white enlargements or contact prints can also be made from the negatives. 6 exposures, C620.

Loading

- 1 Push the latch under the carrying handle in the direction of the arrow and open the back.
- 2 Place the roll of film in the recess adjoining the hinge of the back.
- 3 Break the seal and pull the end of the paper over the two rollers. The black side of the paper must be toward the lens. Thread the end of the paper through the longer slot in the empty spool as far as it will go.
- 4 Bind the end securely to the empty spool with two or three turns of the winding knob. Be sure that the paper is started straight; then close the back.

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1



2



Use Kodak Film No. 620

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Push the metal plate aside to uncover the red window on the back of the camera. Turn the winding knob until a small hand appears; continue slowly until the figure one (1) is centered in the window.

Push the cover over the red window. The film is now in position for your first picture.

**LOAD THE CAMERA IN SUBDUED LIGHT
—NEVER IN STRONG, DIRECT LIGHT**

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4

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Taking the Picture



1. **Set the shutter speed.**
2. **Set the lens opening.**
3. **Focus.**
4. **Cock the shutter** by pushing the cocking lever D as far as it will go in the direction of the arrow.
5. **Compose the picture in the finder.**
6. **Hold the camera steady.** Any movement during exposure blurs the picture.
7. **Press the exposure button slowly,** see illustrations on page 7.
8. **After each picture is taken,** advance the film by turning the winding knob until the next number appears in the red window.

Removing the Film

After all the exposures have been made, turn the winding knob until the end of the protective paper not only passes the red window, but is drawn up to the film spool. In subdued light open the back. Do not allow the roll of film to unwind from the spool on it will be fogged. Pull out the winding knob to disengage it from the spool. Remove the roll of film but do not twist the film tightly on the spool or it may be scratched. Fold under the end of the protective paper and fasten it with the sticker. Move the empty spool to the winding knob recess. Push the winding knob in and engage it with the slot in the end of the empty spool. The camera is now ready to be reloaded. 13



Developing—Film should be developed as soon as possible after exposure. If you wish to develop your own pictures, obtain the booklet "Developing, Printing and Enlarging" from your Kodak dealer and make your prints on Kodak paper.





Photoflash and Photoflood Pictures

Sundown, dark days, or dark interiors need not mark the end of picture taking. Lighting equipment, simple to operate, brings new and unlimited picture opportunities into reach of your camera.

Pictures with Photoflash Lamps can be made by attaching a Kodak Flashholder to the camera. *No synchronizer is needed.* The synchronizing mechanism is built into the shutter and is connected to the Flashholder by a rubber cord at post A.

Either of two types of flash lamps can be used: Class F, such as the SM Photoflash Lamp, or Class M, such as the No. 5 Photoflash Lamp. Synchronization for the No. 5 Photoflash Lamp is controlled by the Synchronizer Lever B.

For Photoflash pictures with an SM Photoflash Lamp:

1. Insert a flash lamp into the reflector.
2. Cock the shutter as usual.

3. Press the exposure button in the usual way.
Do not use the Synchronizer Lever with SM (Class F) Photoflash Lamps.

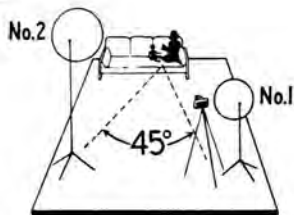
For Photoflash pictures with a No. 5 Photoflash Lamp:

1. Insert a flash lamp into the reflector.
2. Cock the shutter as usual.
3. Press the Synchronizer Lever B down as far as it will go.
4. Press the exposure button in the usual way.

Caution: Do not insert a flash lamp in the reflector if the shutter is set for "T" and the shutter blades are open. The lamp will flash on contact and a serious burn may result.

The Kodak Flashholder is attached to the camera with a Standard Bracket and can be installed or removed in a matter of seconds. Complete instructions are packed with each Flashholder. Exposure information for making flash pictures is also given on page 23 of this manual.





Photoflood Pictures

You can also make indoor pictures with Photoflood Lamps. An effective lighting arrangement is shown in the diagram.

Obtain a No. 1 and a No. 2 Photoflood Lamp and suitable reflectors for them from your dealer. Both lamps fit all regular home sockets. The No. 2 lamp, which gives twice the light of the No. 1 lamp, should be about 2 feet higher as illustrated.

For best results the subject should be near a light-colored background. Exposures for various lamp-to-subject distances are given on page 23 as well as in the Snapshot Kodaguide.

Time Exposures

When the light is not sufficient for a snapshot, a time exposure can be made. Night scenes like that shown below illustrate one of many picture-taking possibilities for time exposures.

To make a time exposure, place the camera on a tripod or other firm support. Tripod sockets are provided in the bed and side wall of the camera. To use the camera on a table, snap out the support marked **KODAK** for vertical pictures or extend the retractable support behind the shutter plate for horizontal pictures.

For exposures from 1 to 10 seconds, set the white shutter speed index at "B"; then press down the exposure button and hold it. The shutter will remain open as long as the exposure lever is depressed.

For exposures longer than 10 seconds, set the shutter at "T." To open the shutter, press down the exposure lever and release it immediately. When the required time has elapsed, press the exposure lever again to close the shutter.

For a scene like this, make an exposure of about 5 minutes at $f/11$ with Kodak Plus-X Film.



ADDING *Interest* TO YOUR PICTURES

Now that you know how to operate your camera, a little practice will enable you to use it with ease and confidence. You can therefore devote attention to making your pictures more interesting by following the suggestions below.



Tell a story—and tell it at a glance. Have the subject doing something, seemingly unaware of the camera. To achieve naturalness, especially in the case of children, include an accessory to engage their interest.



Look beyond the subject—your camera will. Keep in mind that the background should serve merely as a setting for the picture. Eliminate distracting objects. Try a low viewpoint for informal outdoor portraits—the sky is an excellent background.

Composition—Slight changes in camera position may give your snapshots added charm. The viewpoint and the unposed attitude of the subject contribute to the appeal of this picture. $f/16$ at $1/50$, Plus-X Film.



Back Lighting—You can make charming pictorial snapshots with back lighting. Shade the lens from the direct rays of the sun. When shadow detail is important, give twice the normal exposure. $f/8$ at $1/50$, Verichrome Film.



Light Filters—When placed over the camera lens, a filter passes some light rays and absorbs others. Certain filters can be used to darken a blue sky, making white clouds or foreground objects stand out prominently. For this picture a G Filter was used. $f/8$ at $1/200$, Super-XX Film, G Filter.



Using the Depth of Field Table

"Depth of field" is the distance between the nearest and farthest objects in a scene which will be sharp in the picture. Note that the depth of field increases (1) as the lens opening is made smaller, or (2) as the distance focused upon is increased.

A great range of sharpness is desirable in many pictures, particularly in landscapes. Since most objects of interest are at a considerable distance from the camera in such pictures, no difficulty is usually encountered in obtaining the required range of sharpness. However, it is sometimes desirable to record sharply an object near the camera as well as objects at an extreme distance. In such cases, reference to the table below will help you set lens opening and focus to get a depth of field which will cover objects at both positions.

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The Depth of Field for Different Lens Openings

By "depth of field" is meant the range of sharpness in front of and behind the subject focused on, within which details in the picture will be sharp and distinct.

Distance Focused Upon	<i>f</i> /4.5	<i>f</i> /5.6	<i>f</i> /11	<i>f</i> /16	<i>f</i> /22
INF.	57' to inf.	46' to inf.	24' to inf.	17' to inf.	12' to inf.
50 ft.	28' to inf.	25' to inf.	16½' to inf.	13' to inf.	10½' to inf.
25 ft.	17½' to 42½'	16½' to 51'	13' to inf.	10½' to inf.	8½' to inf.
15 ft.	12' to 20'	11½' to 21½'	9½' to 35'	8' to 35'	7' to inf.
10 ft.	8½' to 12'	8½' to 12½'	7½' to 18'	6½' to 22'	5½' to 41'
8 ft.	7½' to 8½'	7' to 9½'	6½' to 12'	5½' to 15'	5' to 22'
6 ft.	5½' to 6½'	5½' to 7'	5' to 8'	4½' to 9'	4½' to 12'
5 ft.	4½' to 5½'	4½' to 5½'	4½' to 6½'	4' to 7½'	3½' to 8½'
4 ft.	3' 9½" to 4' 3½"	3' 8½" to 4' 4½"	3' 5" to 4' 9½"	3' 3½" to 5' 4"	3' 1½" to 6'
3½ ft.	3' 4" to 3' 8½"	3' 3½" to 3' 9½"	3' 1½" to 4' 1½"	2' 11½" to 4' 5½"	2' 9½" to 5'

The depth or range of sharpness is not given for *f*/8 or *f*/32. The range for these openings can be estimated by comparison. "Inf." is the abbreviation for infinity—meaning an unlimited distance from the lens.



The illustrations above show the control that is possible through the use of different lens openings.

In the upper picture a large lens opening was used to obtain a shallow depth of field, thus eliminating a distracting background by having it out of focus. The lower picture shows the use of a small lens opening to obtain great depth of field when detail in foreground and background is desired.

DAYLIGHT EXPOSURE TABLE

for Kodak Plus-X or Verichrome Film

With Super-XX Film, give one-half the recommended exposure. With Kodacolor Film, see the Snapshot Kodaguide.

Type of Subject	Bright Sun	Hazy Sun	Cloudy-Bright	Cloudy-Dull
Brilliant	<i>f/22 and 1/50</i>	<i>f/16 and 1/50</i>	<i>f/11 and 1/50</i>	<i>f/8 and 1/50</i>
Bright	<i>f/16 and 1/50</i>	<i>f/11 and 1/50</i>	<i>f/8 and 1/50</i>	<i>f/5.6 and 1/50</i>
Average	<i>f/11 and 1/50</i>	<i>f/8 and 1/50</i>	<i>f/5.6 and 1/50</i>	<i>f/5.6 and 1/25</i>
Shaded	<i>f/8 and 1/50</i>	<i>f/5.6 and 1/50</i>	<i>f/5.6 and 1/25</i>	<i>f/4.5 and 1/25</i>

This exposure table is for pictures from one hour after sunrise to one hour before sunset.



Brilliant Subject

Beach, marine, and snow scenes; distant landscapes and mountains without prominent objects in the foreground.



Bright Subject

Near-by people in marine, beach, or snow scenes; scenics with foreground objects.



Average Subject

Near-by people, gardens, houses, and scenes not in shade. Use this classification if in doubt.



Shaded Subject

People, gardens, and other subjects in open shade (lighted by open sky—not under trees, porch roof, etc.).

PHOTOFLOOD

One No. 1 and One No. 2 Photoflood Lamp in suitable reflectors. This table is for pictures of people in a room with light-colored walls. In dark-colored rooms or in public halls, give twice the recommended exposure.

This table applies to Super-XX Film. With Plus-X or Verichrome Film use the next larger lens opening.

Exposure Time in seconds	Distance in feet from Lamp to Subject			
	f/4.5	f/5.6	f/8	f/11
1/100	5	3½
1/50	7	5½	3½	...
1/25	10	8	5½	3½

PHOTOFLASH

These exposure guide numbers apply to average subjects in average rooms with light-colored walls and ceilings. For dark subjects in dark-colored surroundings, or outdoors at night, divide the number by 2.

EXPOSURE GUIDE NUMBERS: Divide the number by the distance in feet from lamp to subject to find f/number.

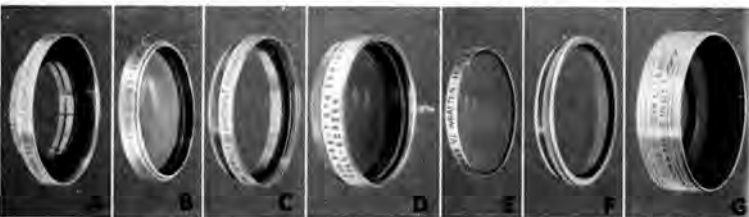
Lamp	SM		No. 5			No. 5B		
Shutter Speed	*open	1/100	*open	1/100	1/200	*open	1/100	1/200
Verichrome	80	80	155	130	110	—	—	—
Plus-X	85	85	165	140	115	—	—	—
Super-XX	140	140	270	225	190	—	—	—
Kodacolor	—	—	—	—	—	50†	40†	25†

*Shutter speed 1/50 second or longer, Bulb, or Time.

†Indoors, without daylight.

CAUTION: Since lamps may shatter when flashed, the use of a transparent protective screen over the reflector is recommended. Do not flash the lamps in an explosive atmosphere.

Aids FOR PICTURE TAKING



A—Adapter Ring
B—Portra Lens
C—Retaining Ring

D—Kodak Pola-Screen
E—Wratten Filter

F—Adapter Ring Insert
G—Lens Hood

Kodak Combination Lens Attachments

The Kodak Combination Lens Attachments permit the use of a supplementary lens, a Wratten Filter, a Kodak Pola-Screen, or a Kodak Lens Hood—either singly or in combination. When used in combination, a Retaining Ring is necessary. For the Kodak Vigilant Six-20 *f*/4.5 in Flash Kodamatic Shutter, the basic unit of the combination is the 1¼-inch Series VI Kodak Adapter Ring with its Insert. All attachments must be Series VI.

A Portra Lens is essential for making pictures of flowers and similar subjects closer than 3½ feet. Three different lenses are available 1+, 2+, or 3+.

A color filter adds greatly to the pictorial effects of black-and-white pictures by darkening the sky and recording the clouds. Three Wratten Filters can be used for this purpose, the K2, G, or A, resulting in medium, strong, and extra strong effects respectively.

A **Kodak Pola-Screen** can also be used in black-and-white pictures to control sky-brightness or to reduce light reflections from glass, wood, and water.

A **Kodak Lens Hood** is best for shading the lens when back-lighted pictures are made. In assembly, the Kodak Lens Hood takes the place of the Adapter Ring Insert and can hold a supplementary lens or a filter in place.

"How to Make Good Pictures"

A handbook for the everyday photographer. It contains the fundamentals for black-and-white picture-taking as well as for color. Profusely illustrated.



This instruction manual . . .

was prepared to help you make good pictures right from the start, and consequently get more enjoyment from photography. There are many Kodak publications on various phases of photography available at your Kodak dealer—some free and some at a nominal price. Ask for them.

Sales Service Division

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