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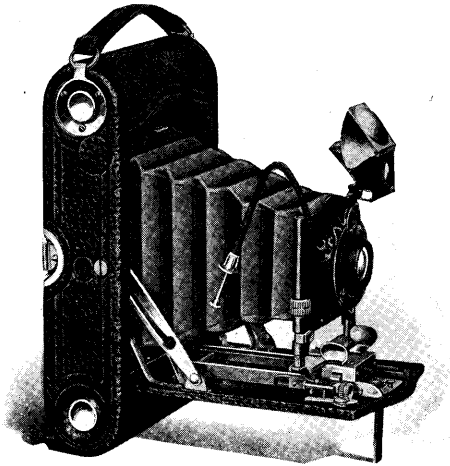
PICTURE TAKING WITH THE

No. 3 AUTOGRAPHIC KODAK



PUBLISHED BY
EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

KODAK
Trade Mark, 1888.

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y,

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PICTURE TAKING WITH THE

No. 3 AUTOGRAPHIC KODAK.

(R. R. AND F. 7.7 ANASTIGMAT LENS.)

PUBLISHED BY THE
EASTMAN KODAK COMPANY
ROCHESTER, NEW YORK

CONTENTS.

BEFORE LOADING.

Before taking any pictures with the No. 3 Autographic Kodak read the following instructions carefully. Make yourself perfectly familiar with the instrument, taking especial care to learn how to operate the shutter. Work it for both time and instantaneous exposures several times before threading up the film.

The first and most important thing for the amateur to bear in mind is that the light which serves to impress the photographic image upon the sensitive film in a small fraction of a second when it comes through the lens, can destroy the film as quickly as it makes the picture. After the film has been developed and all *developer thoroughly washed out,* it may be quickly transferred, in subdued white light, to the fixing bath without injury. Throughout all the operations of loading and unloading, be extremely careful to keep the red paper wound tightly around the film to prevent the admission of light.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

ORDER FILM BY NUMBER

All Kodak Films may be distinguished by the numbers on the ends of the cartons.

A-118

is the number of film for this camera (No. 3 Autographic Kodak.) The number appears on the carton, on the cartridge, and on the Autographic door which is located on back of Kodak.

Autographic Film can be used in old style Kodaks, old style film can be used in Autographic Kodaks, but to get *autographic results*, Autographic film must be used in an Autographic Kodak.

IMPORTANT

When Autographing film, bear down with the stylus as heavily as the paper will stand without tearing.

PART I.

SECTION I.

LOADING WITH FILM.

The Film.
A-118.

The film for the No. 3 Autographic Kodak is furnished in light proof cartridges and the instrument can therefore be loaded in daylight. The operation should, however, be performed in a subdued light, not in the glare of the bright sunlight. It should also be borne in mind that after the seal is broken care must be taken to keep the red paper taut on the spool, otherwise it may slip and loosen sufficiently to fog the film.

The Autographic Film Cartridge is made with a thin red instead of the familiar thick red and black (duplex) paper.

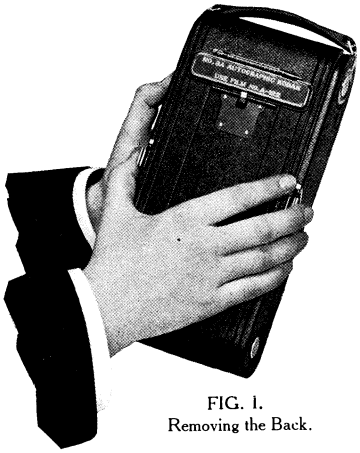


FIG. 1.
Removing the Back.

The thin red paper is not light proof in itself. Between it and the film is inserted a strip of tissue. This tissue serves two purposes: To supplement the red paper in light proofing the cartridge, and to permit the recording, by light, of the writing upon the film.

I. To load the Kodak, take a position at a table where the daylight is somewhat subdued, and grasping the instrument with the left hand remove the back by pressing in simultaneously with the thumb and second finger of the right hand as indicated in Fig. I.

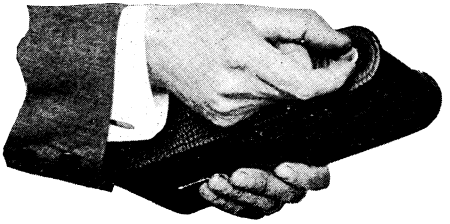


FIG. II.
Springing Out a Spool Pin.

II. The Kodak having been opened, an empty spool having a slit in it will be seen in the winding end of the camera. This forms the reel on which the film is wound after exposure. The full spool is to be placed in the recess at the opposite end of the Kodak. To accomplish this pull out spool pins as shown in Fig. II.

III. Drop the film cartridge into this recess, as shown in Fig. III.

Another and most convenient method of placing the cartridge in the recess is shown in Fig. III-A.

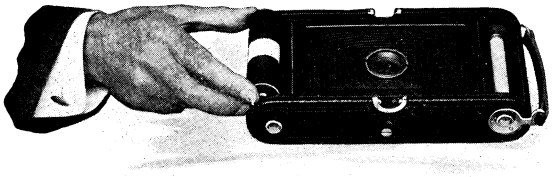


FIG. III.
Inserting a Cartridge.

After the spool pins have been pulled out (Fig. II) wrap the instruction sheet (found with the film) around the spool. This will enable one to raise or lower the spool slightly, so that the spool pins may be readily pressed into place. Be careful to *get the top of the spool at the top of the camera.* The top is the winding side of the camera. Each cartridge is marked, the word "Top" will be found printed on the red paper near the top of the spool.

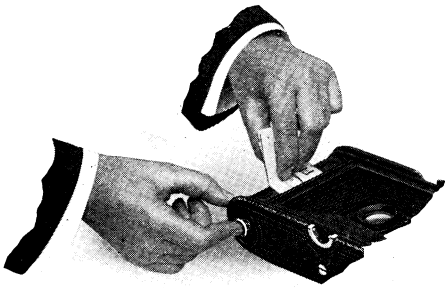


FIG. III-A.

NOTE—If the cartridge is inserted wrong end up the red paper instead of the film will be brought next the lens, resulting, of course, in the absolute loss of the pictures.

IV. Push spool pins into place so that spool revolves upon them.

FIG. IV.
Threading up the Red Paper.

V. Remove the gummed slip that holds the end of the red paper; pass the paper over the two aluminum rollers and thread into the slit in reel, as shown in Fig. IV. Be careful in so doing that the paper draws straight and true.

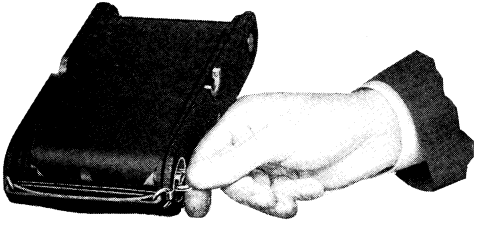


FIG. V.
Turning the Key to Bind Paper on Reel.

In order to secure a tight grip on the red paper, do not unfold the end, but thread it into the slit in reel with the paper creased. By doing this the red paper will not be liable to slip.

VI. Give the key one or two slight turns—just enough to bind the paper on the reel—and no more. See Fig. V.

The paper should now be in position indicated in Fig. VI.

FIG. VI.
Showing position of paper.

VII. Replace the back on Kodak, being careful to put it on right side up (the wide catch at the top), and snap the springs at the top and bottom fully into place. Care should always be taken to handle the back of Kodak carefully, especially when it is detached from camera, as even a slight bend would make it fit badly, resulting very probably in a leakage of light and consequent loss of film.

Throughout the foregoing operation, from the time the gummed slip is cut on the fresh roll of film until the back is once more in place, keep the red paper wound tightly on the roll. If it is allowed to loosen, light will be admitted and the film fogged.

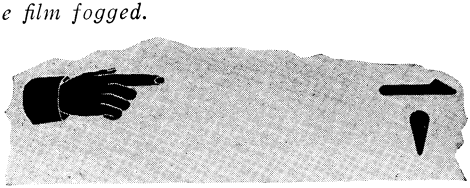


FIG. VII.

VIII. The roll of film in the camera is covered with red paper and this must be partly reeled off before a picture can be taken. Turn the key slowly to the left and watch the little red celluloid window at the back of the camera. When

15 to 18 turns have been given, a hand pointing toward the first number will appear, then turn slowly until the figure 1 is in front of the red window. Fig. VII.

The film is now in position for taking the first picture.

SECTION 2.

LOADING WITH PLATES.

I. In using glass plates the plate holders must be loaded in a dark-room—that is, a room from which all white light has been excluded, as described on page 52.

II. Provide also

No. 3 F. P. Kodak Combination Back.
No. 3 F. P. Plate Holders.
1 dozen Seed Dry Plates, 3¼ x 4¼.
Kodak Dark-room Lamp.
A shelf or table on which to work.

III. Light the lamp and place it upon the table.

IV. Remove the dark slides from the plate holders.

V. Open the box of plates by running a thin knife blade around the edge of the box.

VI. Take out one of the plates and place it in the holder face up. (The face is the dull side). Brush gently over the face of the plate with a camel's hair brush to remove dust.

VII. Replace the dark slide in the holder.

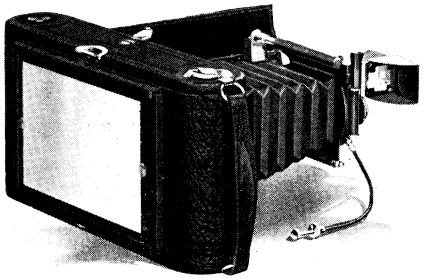
VIII. Repeat the operation until all the plate holders have been filled, then close up the remaining plates in the box, wrap up securely and put them away in a dark drawer.

The remaining operation may be performed in daylight.

IX. Remove the back from the camera as before described. (See page 4).

NOTE—There must, of course, be no film in the Kodak when opening it for use with plates.

X. Remove the back of the adapter by pressing down on the inside spring catch and sliding same out. Then insert ground glass panel for focusing, being sure that side marked front faces the lens. Snap the combination back into place, taking care that the springs at each side engage with the catches and that the back is right side up i. e., the plate holder should draw from the end towards the Kodak handle.



XI. Focus carefully with the largest stop before the lens, and when the lines show sharp and true, close the shutter, remove the ground glass, pressing down on catch at the bottom to remove it, and insert one of the plate holders.

XII. Pull out the dark slide. The plate is now in position for making the first picture, and the exposure should be made the same as for films. After making the exposure re-insert the dark slide in plate holder. Remove the plate holder from the camera by means of leather lug, pressing back slightly on same to start it.

As the focal plane for film and the focal plane for plates are not the same when the adapter is used, the focusing scale should not be resorted to.

PART II.

MAKING THE EXPOSURES.

Before making an exposure with the No. 3 Autographic Kodak, either time or instantaneous, be sure of four things:

FIRST—That the shutter is set properly.

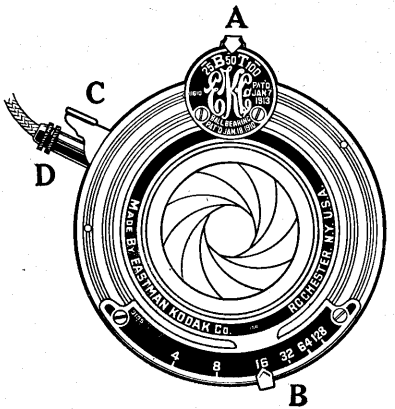
SECOND—That the diaphragm stop is set at the proper opening.

THIRD—That the camera is focused.

FOURTH—That an unexposed section of the film is turned into position. (Or a fresh plate is ready for exposure).

NOTE—Exposures are made by pressing push-pin at end of cable release D or pushing down on release C.

Avoid making too sharp a bend in the cable release, as by doing so it will be liable to kink.



The illustration above shows the shutter as equipped with R. R. Lens and with the U. S. system of diaphragm markings. When the Kodak is equipped with the F. 7.7 Anastigmat Lens, the lower scale on the shutter is marked in the F. system—F.7.7, 11, 16, 22, 32 and 45.

SECTION I.

OPERATING THE SHUTTER.

Perfect familiarity with the shutter is essential to successful picture taking with any camera. The following directions should, therefore, be carefully read and the shutter operated several times before threading the film up for use.

INSTANTANEOUS EXPOSURES.

FIRST—Set the lever A at 25, 50 or 100, according to the time of instantaneous exposure desired.

NOTE—In bright light set the lever at 100, the highest speed. In more subdued lights set at 50 or 25, but do not attempt to make any instantaneous exposures in dull light.

SECOND—Set the lever B at No. 8. (If the Kodak is equipped with F.7.7 lens, use stop No. F.11). Lever B controls the iris diaphragm and No. 8 or F.11 is the proper opening for ordinary instantaneous exposures.

NOTE—For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows, such as in views on the seashore or on the water, use the diaphragm No. 16. With *light* clouds or *slightly* smoky atmosphere use No. 4 or F 7.7 at 100 or No 8 or F. 11 at 50 or 25. *With heavy clouds do not attempt instantaneous exposures.*

THIRD—Press push pin or push down on release C. This makes the exposure.

NOTE—Press push pin on cable release with a firm quick movement, at the same time be sure to hold the Kodak rigid, as a slight jarring will cause a blurred negative.

TIME EXPOSURES.

FIRST—Set the lever A at the point T (time). This adjusts the shutter for time exposures.

SECOND—Set the lever B at No. 16, 32, 64 or 128. If the Kodak is equipped with the F.7.7 lens, set the lever at F.16, 22, 32 or 45. See instructions for use of stops, page 30.

THIRD—Press the push-pin. *This opens the shutter.* Time exposure by a watch. Again press the push-pin. *This closes the shutter.* Shutter may be opened by pressing release C and closed by a second pressure if desired.

BULB EXPOSURES.

When it is desirable to make a very short time exposure this is best accomplished by making a "bulb exposure".

FIRST—Set the lever A at the point "B" (bulb). This adjusts the shutter for bulb exposures.

SECOND—Set the lever B controlling the stops at No. 16, 32, 64 or 128 as desired. If the Kodak is equipped with the F.7.7 lens, set the lever at F.16, 22, 32 or 45. See page 30.

THIRD—Press push-pin to open the shutter, and release it to close the shutter. *This makes the exposure.* The shutter will remain open as long as the push-pin is under pressure.

IMPORTANT.

Do not oil any part of the shutter.

In case of accident return shutter to your dealer or to us, for repairs. As a general rule, make exposures with the cable release instead of with the release C, as the cable release is less likely to jar the camera.

SECTION 2.

INSTANTANEOUS EXPOSURES.

"SNAP SHOTS."

To take instantaneous pictures the object must be in the broad, open sunlight, but the camera should not be. The sun should be behind the back or over the shoulder of the operator.

1.—FOCUS ON THE SUBJECT.

I. Press the concealed button as shown in Fig. 1 and push down the bed of camera to the limit of motion.

II. Set automatic locking device (see page 14) nearest the estimated distance of *principal object* to be photographed in feet, grasp the springs at bottom of front board, and pull out front to limit of motion. Fig. II.

NOTE—The index plate is scaled both by feet and by meters and care should be taken not to confound them.

Except when photographing at a distance of 15 feet or less, it is not necessary to estimate the distance with any more than approximate accuracy; for instance, if the focus is set at 25 feet (the usual distance for ordinary street work) the sharpest part of the picture will be the

FIG. I.
Opening the Front.

objects at that distance from the camera, but everything from 15 to 35 feet will be in good focus. For general street work the focus may be kept at 25 feet, but where the *principal object* is nearer or farther away, the focus should be changed accordingly. The index plate is divided for 6, 10, 25 and 100 feet. Everything beyond 100 feet is in the 100 feet focus. Nothing nearer than 6 feet can be focused without using the portrait attachment. See page 27.

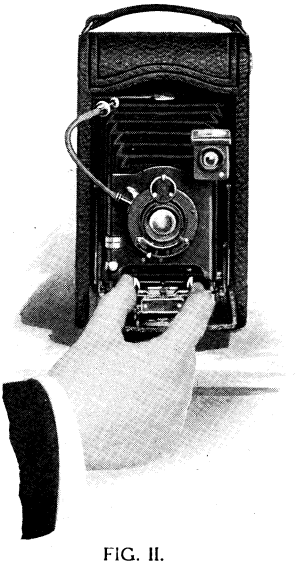
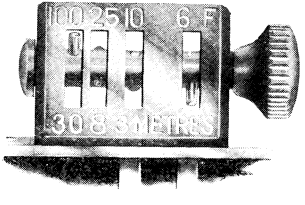


FIG. II.
Extending the Bellows and Focusing.

AUTOMATIC LOCKING DEVICE.

The automatic locking device which is on the right side of camera bed will be found a great convenience in focusing.

By means of this device the front locks automatically at 6, 10, 25 or 100 feet focus.



Showing Automatic Locking Device.

To set the focus, turn knob until catch projects through the slot marked for the distance desired, 6, 10, 25 or 100 feet; then pull out front of camera to limit of motion and the

camera will be in focus for the distance at which you have set the catch.

When not in use the knob of the locking device should be turned so no catch projects.

2—HOW TO USE THE NO. 3 AUTOGRAPHIC KODAK AS A FIXED FOCUS CAMERA.

SET FOCUS AT 25 FEET.

USE SPEED OF 1/25 OF A SECOND.

SET DIAPHRAGM MIDWAY BETWEEN 8 AND 16 *or f.*11 AND 16.

By following the above suggestions this camera can be used as a fixed focus instrument with the additional advantage of being instantly convertible to a focusing camera when conditions call for it. It must be remembered, however, that when using this Kodak as a fixed focus type, it is necessary that the subject be in brilliant sunlight, in order to obtain a fully timed exposure.

EXPLANATION.

A lens is often spoken of erroneously as having a fixed focus.

There is no such thing as a universal or fixed focus lens but in certain cameras, 3¼ x 4¼ and smaller (equipped with short focus lenses) the lens is immovable, i. e., set at a distance that is a compromise, as to its focus, between far and near points. A camera with a lens so focused, used in combination with a relatively small stop, is designated a universal or fixed focus instrument.

3—USE STOP No. 8 OR F. 11.

For all ordinary out-door work when the sun is very bright, use stop No. 8 when Kodak is equipped with the *Double Lens (R. R.)* and use F.11 when equipped with the F.7.7 *Anastigmat Lens.* If a smaller stop be used, the light will be so much reduced that it will not sufficiently impress the image on the film and failure will result.

In views on the water when the sunlight is *unusually strong* and there are no heavy shadows, diaphragm No. 16 may be used.

If a smaller stop opening than No. 16 be used for snap shots, *absolute failure will result.*

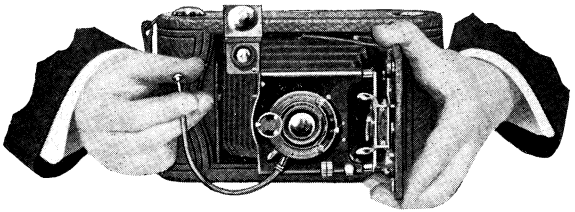


FIG. III.

4—LOCATE THE IMAGE.

Aim the camera at the object to be photographed and locate the image in the finder. For a horizontal picture hold the camera as shown in Fig. III, reversing the finder, as indicated. Always look into the finder from directly over it, *not at an angle.* (Of course, when the focusing glass is employed the image will be located on that instead of in the finder.)

For a vertical exposure the camera must be held as shown in Fig. IV. The finders give the scope of view and show a facsimile of the picture as it will appear, but on a reduced scale.

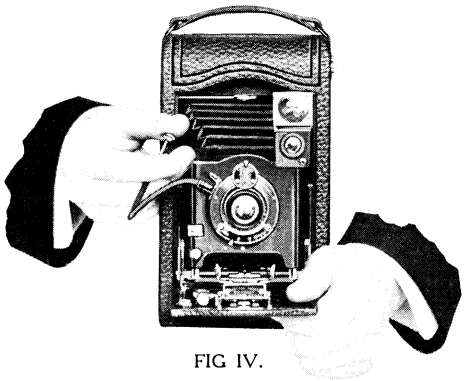
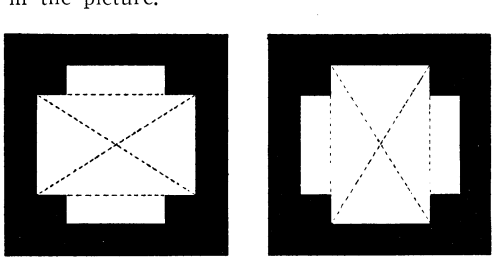


FIG. IV.

WITH PLATES.

When using plates the ground glass *must* be employed for focusing. Insert ground glass in plate adapter. Open the shutter. Focus carefully with the largest stop before the lens, and when the lines show sharp and true, close the shutter. Remove the ground glass and insert plate holder.

Any object that does not show in the finder will not show in the picture.



VIEW INCLUDED WHEN MAKING A HORIZONTAL PICTURE.

VIEW INCLUDED WHEN MAKING A VERTICAL PICTURE.

FIG. V.

It will be noticed that the top of the finder is notched as shown in Fig. V. This is done so that one finder will correctly show the view included when the Kodak is held in either horizontal or vertical position. As the picture taken with the No. 3 Autographic Kodak is oblong it will readily be seen that unless the finder was made in this manner it could not correctly show the exact view intended when held in either position.

Remember that only the view indicated in the dotted lines will show in the picture.

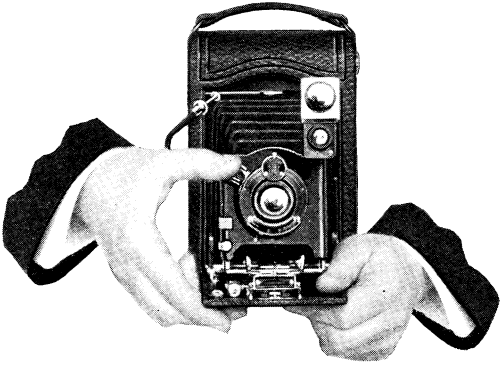


FIG. VI.

Fig. VI shows how to hold the camera when making an exposure without the use of the cable release. Grasp the bed of Kodak firmly with the left hand, steady it with the right, and with the thumb of the right hand lightly touch the exposure lever.

5—HOLD IT LEVEL.

The Kodak must be held level.

If the operator attempts to photograph a tall building while standing near it, by pointing the camera upward (thinking thereby to center it) the result will be similar to Fig. VII.

This was pointed too high. This building should have been taken from the middle story window of the building opposite.

FIG. VII.

The operator should hold the camera *level,* after withdrawing to a proper distance, as indicated by the image shown in the finder on the top of the camera.

NOTE—The rising front may be used in helping to center high objects on the plate. See page 35.

If the object be down low, like a small child or a dog, the Kodak should be held down level with the center of the object.

6—PRESS PUSH-PIN AT END OF CABLE RELEASE

HOLD THE CAMERA STEADY,
HOLD IT LEVEL AND
PRESS PUSH-PIN.

This makes the Exposure.

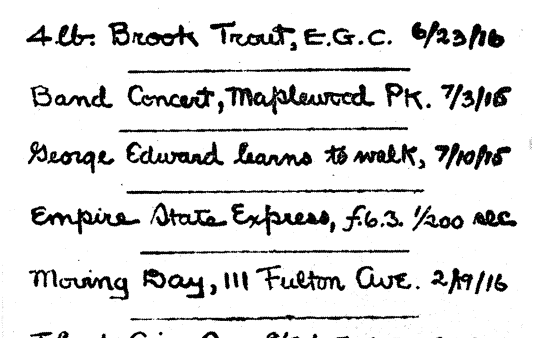
7—THE AUTOGRAPHIC FEATURE.

The Autographic Kodak has a spring door on the back, covering a narrow slot through which the writing is done upon the red paper. The slot is provided with an automatic safety spring border which operates when the door is open to press the papers into contact with back of the film, thus, securing the sharp printing of the image of the writing and preventing the diffusion of light around the edges of the slot. This slot is located so that normally the writing comes between the exposures.

FIG. VIII.

THE AUTOGRAPHIC RECORD AS A GUIDE.

Many amateurs have distinctly improved the quality of their work by making notes, at the time of exposure, of the prevailing conditions. As: Bright light, 1-50 sec., stop No. 8, which, by the way, can be easily abbreviated to: B, 1-50, 8. By keeping such records the amateur can quickly find the causes of failure, if any. By comparing negatives and records he will soon get a line on his errors and when he knows what his errors are, he can easily rectify them. It is obvious that the best way to make these records is autographically—*on the film, at the time.*



An Autographic Negative.

THE OPERATION.

After the picture is taken lift up the spring door with thumb, (Fig. VIII). Use the stylus, held in as upright a position as is convenient and write on the strip of exposed red paper any memorandum desired, such as the title of the picture, the date, or details in regard to the exposure, light, stops, etc., (Fig. IX).

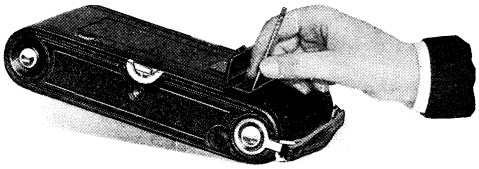


FIG. IX.
Position of stylus when writing record data on Autographic Film Cartridge used in Autographic Kodak.

To get a clear impression, press firmly on both up and down strokes. *While writing, or afterwards, the sun should not be allowed to shine upon the paper.* The action of the stylus so affects the tissue as to permit the light to record the writing upon the film. After finishing the writing the door should be left open for printing, in accordance with the following table:

(*Expose to the sky but not to the sun.*)

	OUT OF DOORS	INDOORS CLOSE TO WINDOW
BRILLIANT LIGHT	2 to 5 Seconds	5 to 7 Seconds
DULL LIGHT	5 to 10 Seconds	10 to 15 Seconds

INCANDESCENT LIGHT, distance 2 inches, 30 to 60 sec.
WELSBACH LIGHT, distance 6 inches, 30 to 60 sec.

IMPORTANT—When you have used the last exposure (No. 6 or 12) on your roll of film and have made the autographic record of it in accordance with the foregoing directions, turn the winding key of the Kodak until a letter (A) appears in the center of the window in the back of the Kodak. Raise the spring-door and write your name on the red paper, expose it to the sky the same as was done when making the exposure records, then close the spring-door and finish winding film and red paper for removal from the Kodak. Your film is now ready to send to your finisher and when developed will be readily identified by the autographic copy of your name which you wrote on the red paper.

1. Close the door before winding a new film into place.

2. **Caution.** In order to locate the writing accurately in the space between the negatives it is important that the film should be turned so that the exposure number centers perfectly in the red window of the Kodak.

TURN A NEW SECTION OF FILM INTO POSITION: Turn the key in top of camera slowly to the left, until the next number appears before the red window. Three or four turns will be sufficient to accomplish this. The warning hand appears only before No. 1. See Fig. X.

Repeat the foregoing operation for each picture.

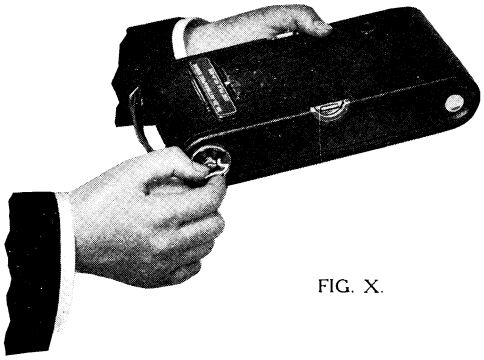


FIG. X.

SECTION 3.

TIME EXPOSURES.

INTERIORS.

1. Place the Kodak in position.

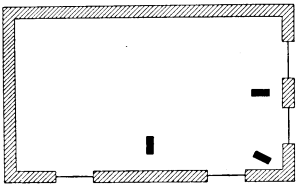


Diagram showing positions of Kodak.

Set camera in such a position that the finder will embrace the view desired.

The diagram shows the proper positions for the Kodak. It should not be pointed directly at a window, as the glare of light will blur the picture. If all the windows cannot be avoided, pull down the shades of such as come within the range of the Kodak.

To make a time exposure, place the Kodak on some firm support, like a chair or table, and focus as before described.

Fig. I shows the Kodak in position for a vertical exposure. The Kodak is also provided with tripod sockets and may be used on a tripod.

When it is desired to make a horizontal time exposure without the use of a tripod, pull down lever at side of focusing scale and place Kodak in position, as shown in Fig. II (page 25).

Adjust the shutter for a time exposure as described on page 11.

All being in readiness, press the push-pin or touch the lever once to open, and again to close the shutter. Time the exposure by a watch.

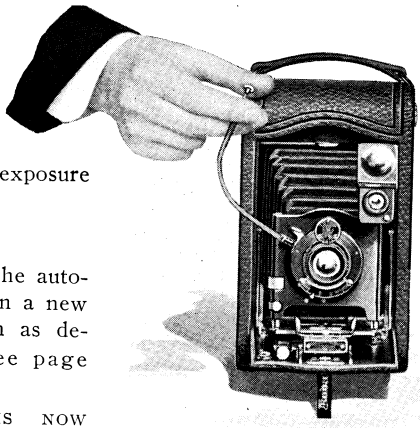


FIG I.

TURN THE KEY.

After making the autographic record, turn a new film into position as described before, (see page 23).

THE KODAK IS NOW READY FOR THE NEXT INTERIOR EXPOSURE.

Follow the directions given heretofore for each successive exposure.

When the last interior exposure is made, adjust the shutter for instantaneous exposures as before directed.

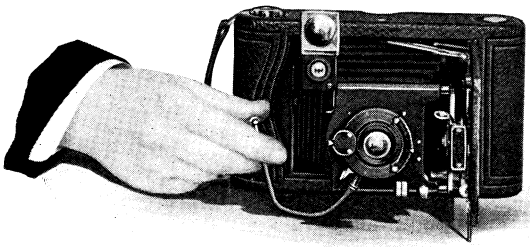


FIG. II.

TIME NEEDED FOR INTERIOR EXPOSURES.

The following table gives the time of the exposure required under varying conditions of light for the Kodak equipped either with the *Double Lens* (Rapid Rectilinear) or F.7.7 *Anastigmat Lens.* When using the model equipped with the *Double Lens* the time given in the table is with the stop 16 in the lens. If the stop No. 8 is used give only one-half the time, if the stop No. 128 is used give 8 times the time of the table. When using the *Anastigmat Lens* the time given in the table is with the stop F.16 in the lens. If the stop F.11 is used give only one-half the time; if the stop F.45 is used, give eight times the time of the table. The smaller the stop the sharper the picture. The No. 16 gives the best results for interiors.

White walls and more than one window:

bright sun outside, 4 seconds;
hazy sun, 10 seconds;
cloudy bright, 20 seconds;
cloudy dull, 40 seconds.

White walls and only one window:

bright sun outside, 6 seconds;
hazy sun, 15 seconds;
cloudy bright, 30 seconds;
cloudy dull, 60 seconds.

Medium colored walls and hangings and more than one window:

bright sun outside, 8 seconds;
hazy sun, 20 seconds;
cloudy bright, 40 seconds;
cloudy dull, 80 seconds.

Medium colored walls and hangings and only one window:

bright sun outside, 12 seconds;
hazy sun, 30 seconds;
cloudy bright, 60 seconds;
cloudy dull, 120 seconds.

Dark colored walls and hangings and more than one window:

bright sun outside, 20 seconds;
hazy sun, 40 seconds;
cloudy bright, 80 seconds;
cloudy dull, 2 minutes, 40 seconds.

Dark colored walls and hangings and only one window:

bright sun outside, 40 seconds;
hazy sun, 80 seconds;
cloudy bright, 2 minutes, 40 seconds;
cloudy dull, 5 minutes, 20 seconds.

The foregoing is calculated for rooms whose windows get the direct light from the sky, and for hours from three hours after sunrise until three hours before sunset.

If earlier or later, the time will be longer.

TO MAKE A PORTRAIT.

Place the sitter in a chair partly facing the Kodak (which should be located slightly higher than an ordinary table) and turn the face slightly toward the instrument, having the eyes centered on an object at the same level with the lens. Center the image in the finder. For a three-quarter figure the Kodak should be from 6 to 8 feet from the figure; and for a full figure from 8 to 10 feet. The background should form a contrast with the sitter.

KODAK PORTRAIT ATTACHMENT.

The attachment is simply an extra lens slipped on over the regular lens and in no way affects its operation except to change the focus.

Use the Kodak Portrait Attachment No. 3 with the No. 3 Autographic Kodak when equipped with the Rapid Rectilinear Lens. Use the Kodak Portrait Attachment No. 6 when Kodak is fitted with the F.7.7 Anastigmat Lens.

By means of the Portrait Attachment, large head and shoulder portraits of various sizes may be obtained. With the Attachment in position and the focus set at 6 feet, the subject should be placed exactly 2 feet, 8 inches from the lens.

At 10 feet focus, place the subject 3 feet from the lens.
At 25 feet focus, place the subject 4 feet from the lens.
At 100 feet focus, place the subject 4½ feet from the lens.

TIME EXPOSURES IN THE OPEN AIR.

When the smallest stop is in the lens the light admitted is so much reduced that time exposures out of doors may be made the same as interiors, but the exposures must be much shorter.

WITH SUNSHINE—1-5 second.

WITH LIGHT CLOUDS—From ½ to 1 second will be sufficient.

WITH HEAVY CLOUDS—From 2 to 5 seconds will be required.

The above is calculated for the same hours as mentioned above and for objects in the open air. For other hours or for objects in the shadow, under porches or under trees, no accurate directions can be given; experience only can teach the proper exposures to give.

Time exposures cannot be made while the Kodak is held in the hand. Always place it upon some firm support, such as a tripod, chair or table.

For exceedingly short time exposures as above described use the "bulb exposure." See page 11.

"F." AND "U. S." SYSTEMS.

A lens is said to work at a certain "speed," this means that the lens will cut sharp to the corners, with an opening a certain proportion of its focal length. It should be borne clearly in mind that this speed depends *not* upon the size of the opening, but upon the size of the opening in *proportion to the focal length of the lens* (distance from lens to plate

when focused on infinity). The lens that will cut sharp with the largest opening is said to possess the greatest speed.

Such openings are termed stop or diaphragm openings, and for convenience in estimating exposures, are arranged according to two systems, the f. system and the Uniform System, or U. S. system, as commonly abbreviated.

In the f. system, the proportional size or "value" of the stop opening is designated by "f," and is the quotient obtained by dividing the focal length of the lens by the diameter of the stop.

Taking, for instance, a lens of 8 inch focus with a stop 1 inch in diameter, we find that $8 \div 1 = 8$; hence, 8 is the f. value of the stop and would be designated f.8. Suppose the stop is $\frac{1}{4}$ inch in diameter, we would then have $8 \div \frac{1}{4} =$ f.32.

For convenience, the uniform system of marking stop openings has been adopted by nearly all manufacturers of iris diaphragms. Such convenience is at once apparent when we understand that each higher number stands for an opening having *half* the *area* of the preceding opening, each smaller stop (or higher number) requiring double the time of the one next larger.

With the f. system, each stop is a certain proportion of the focal length and not arranged with reference to the other openings so that estimating exposure is much more complicated by this system.

As a number of exposure meters and similar devices for determining the proper exposure are based upon the f. system, we append the following table showing the "f. Value" of each of the uniform system openings:

U. S. 4=f. 8	U. S. 32=f. 22
U. S. 8=f. 11	U. S. 64=f. 32
U. S. 16=f. 16	U. S. 128=f. 45

DIAPHRAGMS.

When the Kodak is equipped with the R. R. (Rapid Rectilinear) lens, the stops should be used as follows:

No. 4—For instantaneous exposures on *slightly* cloudy days.
No. 8—For *all ordinary instantaneous exposures* when the sun shines.
No. 16—For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows; such as in views on the seashore or on the water; also for interior time exposures, the time for which is given in the table on page 26.
Nos. 32 and 64—For interiors. *Never for instantaneous exposures*
No. 128—For time exposures outdoors in cloudy weather. *Never for instantaneous exposures.* The time required for time exposures on cloudy days with smallest stop will range from 1-5 second to 5 seconds, according to the light. The smaller the stop the sharper the picture.
Absolute failure will be the result if you use the smallest stop for instantaneous exposures.

If the Kodak is equipped with the F. 7.7 (Anastigmat) lens, use the stops in the following manner:

No. 7.7—For instantaneous exposures on *slightly* cloudy days.
No. 11—For *all ordinary instantaneous exposures* when the sun shines.
No. 16—For instantaneous exposures when the sunlight is unusually strong and there are no heavy shadows; such as in views on the seashore or on the water; also for interior time exposures, the time for which is given in the table on page 26.
Nos. 22 and 32—For interiors. *Never for instantaneous exposures.*
No. 45—For time exposures outdoors in cloudy weather. *Never for instantaneous exposures.* The time required for time exposures on cloudy days with smallest stop will range from 1-5 second to 5 seconds, according to the light. The smaller the stop, the sharper the picture.
Absolute failure will be the result if you use the smallest stop for instantaneous exposures.

SECTION 4.

FLASH LIGHT PICTURES.

By the introduction of Eastman Flash Sheets, picture taking at night has been wonderfully simplified. A package of flash sheets, a piece of cardboard, a pin and a match complete the list of essential extras, although a Kodak Flash Sheet Holder is a great convenience.

With flash sheets, no lamp is necessary, there is a minimum of smoke, and they are far safer than any other self-

burning flash medium, besides giving a softer light that is less trying to the eyes.

Many interiors can be taken with the flash sheets that are impracticable by daylight, either by reason of a lack of illumination or because there are windows in a direct line of view which cannot be darkened sufficiently to prevent the blurring of the picture.

Evening parties, groups around a dinner or card table or single portraits may be readily made by the use of our flash sheets, thus enabling the amateur to obtain souvenirs of many occasions which, but for the flashlight, would be quite beyond the range of the art.

PREPARATION FOR THE FLASH—The camera should be prepared for time exposure, as directed on page 24 of this manual (except that the No. 8 or F.11 stop must be used), and placed on some level support where it will take in the view desired.

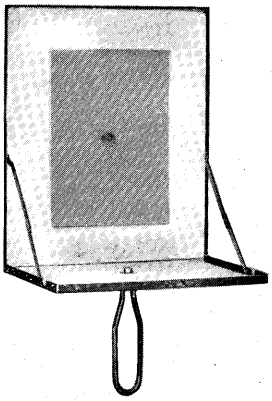
Pin a flash sheet by one corner to a piece of cardboard which has previously been fixed in a perpendicular position. If the cardboard is white it will act as a reflector and increase the strength of the flash.

The flash sheet should *always* be placed two feet behind and two or three feet to one side of the camera. If placed in front or on a line with front of Kodak, the flash would strike the lens and blur the picture. It should be placed at one side as well as behind, so as to throw a shadow and give a little relief in the lighting. The flash should be at the same height or a little higher than the camera. The support upon which the flash is to be made should not project far enough in front of it to cast a shadow in front of the Kodak. An extra piece of cardboard a foot square placed under the flash sheet will prevent any sparks from

the flash doing damage. However, by using the Kodak Flash Sheet Holder, all these contingencies are taken care of, and we strongly advise its use.

THE KODAK FLASH SHEET HOLDER.

This holder may be held in the hand, *always between you and the flash sheet.* Or it may be used on any Kodak tripod, being provided with a socket for this purpose. The sheet is placed in position in the center of the larger pan over the round opening which has a raised saw tooth edge extending half way around it. Press with the thumb on the sheet, so slight break is made and a portion of the sheet projects partially through the opening. Then to insure the sheet being more securely fastened, press around the notched edge, forcing this portion of flash sheet firmly into position on the pan.



Then to set off the flash, merely insert a lighted match, from behind through the round opening.

TAKING THE PICTURE.

Having the Kodak and the flash sheets both in position, and all being in readiness, open the camera shutter, stand at arm's length and touch a match from behind through the round opening in the center.

NOTE—If you are not using the Kodak Flash Sheet Holder, place the match in a split stick at least two feet long.

There will be a bright flash which will impress the picture on the sensitive film. Then close the shutter and turn a fresh film into place with the key, ready for another picture.

THE FLASH SHEET.

The size of the sheet required to light a room varies with the distance of the object farthest from the camera, and the color of the walls and hangings.

TABLE.

For	10	feet	distance	and	light	walls	and hangings	use 1 No. 1 sheet.
"	10	"	"	"	dark	"	"	" 1 No. 2 sheet.
"	15	"	"	"	light	"	"	" 1 No. 2 sheet.
"	15	"	"	"	dark	"	"	" 1 No. 3 sheet.

NOTE—Never use more than one sheet at a time in the Kodak Flash Sheet Holder.

To MAKE A PORTRAIT—Place the sitter in a chair partly facing the Kodak (which should be located slightly higher than an ordinary table) and turn the face slightly towards the instrument, having the eyes centered on an object at the same level with the lens. The proper distance from the camera to the subject can be ascertained by looking at the image in the finder. For a three-quarter picture this will be from 6 to 8 feet, and for a full figure from 8 to 10 feet.

The flash should be on the side of the Kodak away from the face, that is, the sitter should not face it. The flash should not be higher than the head of the sitter.

For using Portrait Attachment, see page 27.

To MAKE A GROUP—Arrange the chairs in the form of an arc, facing the Kodak, so that each chair will be exactly the same distance from the camera. Half the persons composing the group should be seated and the rest should stand behind the chairs. If the group is large any number of

chairs may be used, but none of the subjects should be seated on the floor, as sometimes seen in large pictures, because the perspective will be too violent.

BACKGROUNDS—In making single portraits or groups, care should be taken to have a suitable background against which the figures will show in relief; a light background is better than a dark one, and often a single figure or two will show up well against a lace curtain. For larger groups a medium light wall will be suitable.

The *finder* on the camera will aid the operator in composing the groups so as to get the best effect. In order to make the image visible in the finder the room will have to be well lighted with ordinary lamplight, which may be left on while the picture is being made, provided none of the lights are placed so that they show in the finder.

Eastman Flash Sheets burn more slowly than flash powders, producing a much softer light and are, therefore, far preferable in portrait work. The subject however, should be warned not to move, as the picture is not taken *instantaneously,* about one second being required to burn one sheet.

EASTMAN FLASH CARTRIDGES.

Eastman Flash Cartridges may be substituted for the sheets if desired. We recommend the sheets, however, as more convenient, cheaper and capable of producing the best results. The cartridges are only superior where absolutely *instantaneous* work is essential.

SECTION 5.

RISING AND SLIDING FRONT.

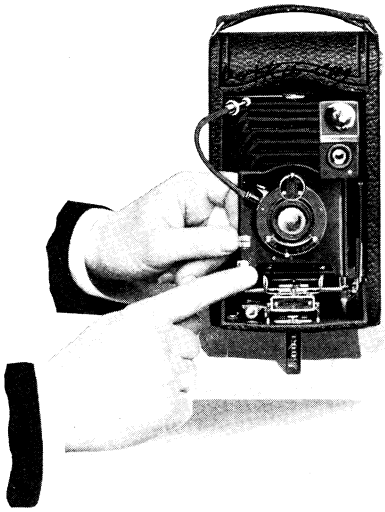


FIG. I.

The No. 3 Autographic Kodaks are provided with a rising front, which may be utilized in cutting out an undesirable foreground or to assist in taking in the top of a high building, etc. The front will also slide to either the right or left (up and down when used for horizontal pictures).

Fig. I. shows how to raise and lower the front when making vertical exposures. The front may be raised or lowered by pressing in on eccentric catch just below milled screw, and at the same time turning screw to right or left.

When through using, center lens by moving the front up or down as the case may be, until the eccentric catch locates itself in notch in standard.

The front can be moved to the right or left (up or down when Kodak is placed on its side for a horizontal exposure) by first releasing lever and then pressing down on

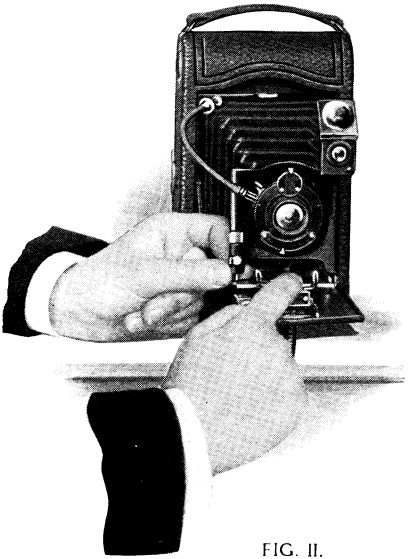


FIG. II.

spring catch directly under the lever as shown in Fig. II, and at the same time sliding front in either direction to the desired position. Lock in position by pushing over lever. When through using, reverse the operation shown in Fig.

II, and slide back to the center when the spring catch will hold front in position. Then turn lever to hold front rigid.

In order to make a sharp picture when using the rising front it will be better to use a small stop (No. 32 or 64) and as this in turn necessitates a time exposure, a tripod or other firm support must be provided. Experience alone can teach the many ways in which the rising and sliding front may be used for composing artistic pictures.

N. B.—Do not fail to center front before closing camera, as otherwise there is danger of ruining bellows when folding.

CLOSING THE KODAK.

When through using the Kodak fold the bellows by reversing the operation shown in Fig. II, page 14, and press down on arm locks on each side of bed, as shown above. The bed will now close readily.

CAUTION.

Before closing the bed of the camera, be careful to note that the finder is in the upright position with hood down, and that the front board has been pushed back to the limit of motion.

If it is in proper position it will not interfere with the bed in closing.

PART III.

REMOVING THE FILM.

No dark-room is required for changing the spools in the No. 3 Autographic Kodak. The operation should, however, be performed in a subdued light.

1. When the last section of film has been exposed, and the autographic record of your name has been made as described on page *23*, turn the key about 5 half-turns.

II. Provide an extra spool of film to fit this Camera, and take a position by a table as far as possible from any window.

III. Remove the back from the Kodak as before described, page 4.

IV. Holding the red paper taut, so as to wind tightly, turn the key until the paper is all on the reel. Fig. I.

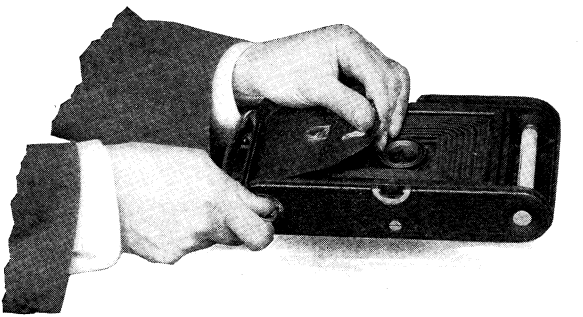


FIG. I.

V. Hold ends of red paper and sticker together to prevent paper from loosening on reel.

NOTE—If sticker folds under roll, raise it up with the point of a lead pencil.

VI. Pull out spool pin and winding key, and lift out roll of film as shown in Fig. II.

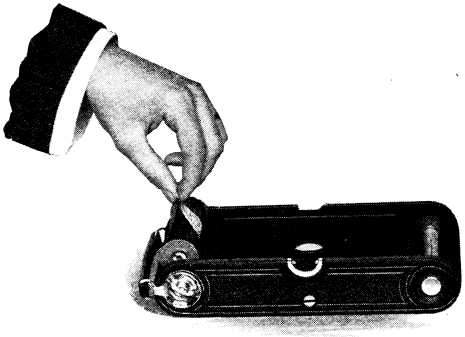


FIG. II.
Removing the Cartridge of Exposed Film.

VII. Fold over half inch at end of red paper (so as to make subsequent breaking of the seal easy), and then seal with a sticker.

VIII. Wrap up exposed film immediately to prevent the possibility of light being admitted.

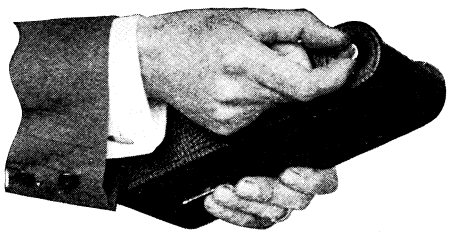


FIG. III.
Pulling out Center Pins to remove Empty Spool.

IX. Now take out the empty spool by drawing out the center pins which hold it in place.

X. Slip the spool into place at the winding side of camera (this will

form the new reel) pulling out the key in so doing as shown in Fig. IV and fitting the web which is attached to key into the slot in the end of spool. Now push the axis pin in the opposite end of spool, until it is fixed in position by the embossed stop.

XI. Load as described in Part I, page 3.

The roll of exposures can now be mailed to us for finishing (see price list) or you can do the developing and printing yourself.

Important.—Autographic Film should be developed as promptly as possible after exposure.

The quality of the image on all sensitized products is retained by immediate development after exposure.

FIG. IV.
Pulling out Key to admit new Reel.

NOTE—In mailing us films for development do not fail to mark the packages plainly with your name and address and write us a letter of advice, with remittance.

"CINCH MARKS."

If the film and paper loosen up a trifle when taken from the camera, many amateurs are likely to take the cartridge in the hand and wind it as closely as possible, cinching it

tightly with a winding motion. There's nothing more likely to injure the negative than this tight drawing of the film as it abrades the surface, making fine parallel scratches running lengthwise of the film, which in some cases, will ruin the negative. *Do not "cinch" the cartridge.* It simply needs to be wound tightly enough so that the red paper keeps inside the flanges.

DIMMED FINDERS AND HOW TO MAKE THEM BRIGHT AGAIN.

For some cause which is not thoroughly understood, glass will sometimes "sweat" to such an extent as to cover it with a sort of film, which, of course, makes it very dull whether it be used as lens or mirror.

Whatever the cause, the result is the occasional dimming of finders and lenses. With finders the trouble is sometimes in the mirror, which necessitates opening the finder and wiping the mirror by means of a soft cotton cloth.

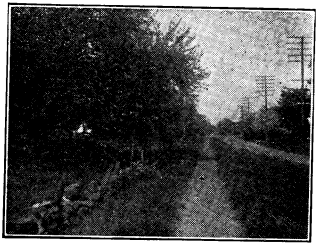
The brilliant finders on the No. 3 Autographic Kodaks can readily be cleaned by lifting up front and swinging back top. After cleaning as above close by simply snapping back into position.

CLEAN LENSES.

Dirty or dusty lenses are frequently the cause of photographic failures. These pictures illustrate this point clearly. The sharp, full-timed picture at top (page 42) was taken with the lens clean and in good order. To produce the effect shown in the picture at bottom, the operator lightly touched the face of the lens with his thumb, which was slightly damp with perspiration.

Lenses should be frequently examined by looking *through* them, and if found to be dirty, should be wiped, both front and back, with a clean, soft linen handkerchief. Large spots of dust or dirt on the lens will cause defects in the picture, while if the lens is evenly covered with a film of dust, dirt or moisture, the effect will be to cut off a great deal of light and make the picture undertimed.

Clean Lens



Slightly Dirty Lens.

KEEP DUST OUT OF THE CAMERA.

Defective negatives are often caused by particles of dust which have collected on the inside of the camera and settle upon the film in particles that produce small dark spots upon the prints.

It is therefore well to wipe out the inside of camera and bellows occasionally, with a slightly damp cloth. In Summer weather or after the camera has remained idle for any length of time, this needs special attention.

PART IV.

DEVELOPING.

There is no necessity of working in a dark-room or waiting until night to develop film. It can be done in daylight at any time and place. And the daylight method of developing film gives better results than the dark-room way.

Film may be developed in daylight by the Kodak Film Tank Method. Detailed directions for developing will be found in the manual which accompanies the goods. The operation is given briefly in the following pages.

We recommend the Kodak Film Tank method particularly for its simpleness, and the uniformly good negatives which it gives.

The preparation of an Autographic Film Cartridge for development and the method of developing it in the Kodak Film Tank is precisely the same as for the regular N. C. film cartridge.

DEVELOPING WITH THE KODAK FILM TANK.

For use with No. 3 Autographic Kodak provide a 3½ inch Kodak Film Tank.

The Kodak Film Tank consists of a wooden box, a light-proof apron, a "transferring reel," a metal "solution cup" in which the film is developed, and a hooked rod for removing film from solution. There is also a dummy film cartridge with which one should experiment before using an exposed cartridge. The various parts of the outfit come packed in the box itself.

NOTE—Avoirdupois weight is the standard used in compounding photographic formulæ.

1. Take everything out of the box. Take apron and Transferring Reel out of solution cup.

2. Insert the axles, marked "C" and "D" in the cut, in the holes in front of box. The front will be towards you when the spool carrier in end of box is at your right.

3. The axle "C" must be pushed through the hollow spindle which will be found loose in the box. The two lugs on this spindle are to engage the hooks at the end of apron. The axle "D" must be pushed through the hollow rod of the Transferring Reel to hold reel in position as indicated in the illustration. The flanges at each end of the Transferring Reel are marked "Y" in the illustration.

4. Attach one end of the apron to spindle through which axle "C" passes by means of the metal hooks which are to be engaged with the lugs on the spindle. The corrugated side of the rubber band is to be beneath the apron when it is attached. Turn to the left on axle "C" and wind entire apron on to spindle, maintaining a slight tension on apron in so doing by resting one hand on it.

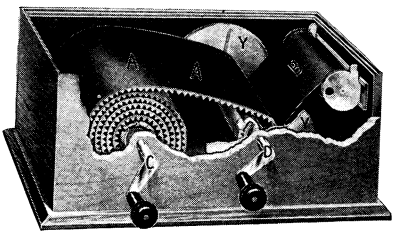


FIG. I.

IMPORTANT.

Preparing the Cartridge.

Film to be used in the Kodak Film Tank must be fastened to the red paper at both ends. All films are fastened at one end in our factory. The operation can be accomplished in the following manner:

Just before you are ready to develop (holding spool with the unprinted side of the red paper up) unroll the red paper carefully until you uncover the piece of gummed paper which is fastened to end of film and is to be used as a means of fastening film to red paper. Moisten the gummed side of sticker evenly for about an inch across the end and stick it down to red paper, rubbing thoroughly to secure perfect adhesion. Wind end of red paper on spool again and the cartridge is ready to insert in machine.

5. Insert film cartridge in spool carrier and close up the movable arm against end of spool. Have the red paper ("B" in Fig. I) lead from the top.

6. Thread the paper underneath the wire guard on transferring reel through which axle "D" passes (Fig. 2) and turn axle slowly to right until the word "stop" appears on red paper.

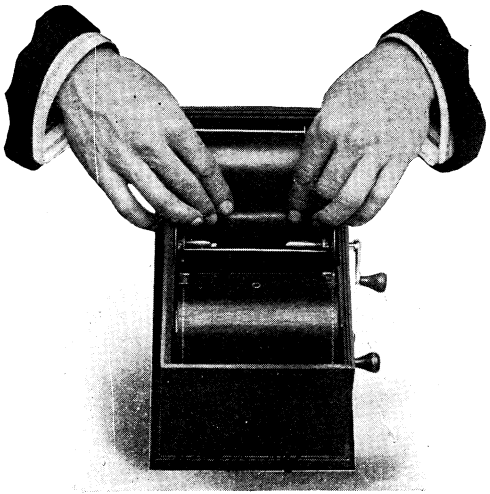


FIG. 2.

7. Now hook apron to lugs on axle "D" in precisely the same manner that you hooked the opposite end to axle "C", except that axle "D" turns to the right.

8. Turn handle half a revolution so that apron becomes firmly attached and put on cover of box. Turn axle "D" slowly and steadily until red paper, film and apron are rolled up together on transferring reel. As soon as this is completed the handle will turn very freely.

While turning axle "D" to the right, keep pressure on axle "C" in the opposite direction. This will act as a brake and will keep the apron, film and red paper taut and in the correct position.

9. Prepare developing solution in solution cup according to directions in Kodak Film Tank Manual.

IMPORTANT.

10. Remove cover from box and take hold of the red paper where the paper extends beyond the end of apron; then wind axle "D" until the red paper becomes taut. Unless this is done there is a chance of the film touching portions of the apron and causing non-development of that part of film.

NOTE—Where the film is so short that the red paper does not extend, the above instructions are not necessary.

11. Draw out axle "D", holding apron and red paper with other hand to keep end of apron and paper from loosening. Remove entire Transferring Reel, containing apron, paper and film, (which is freed by pulling out axle "D") and slip a small rubber band around the apron tightly so that there will be no possibility of its unwinding.

NOTE—In removing reel do not squeeze the apron, as by doing so there will be a tendency for it to buckle.

12. Insert the Transferring Reel (containing apron, paper and film) in the previously prepared developer immediately.

The operation of removing reel from box can be done in the light of an ordinary room, but for safety it is well that the light should not be too bright.

USING THE SOLUTION CUP.

13. Having filled Solution Cup, lower Transferring Reel into cup with end containing cross bar up. (Fig. 3.) Let reel slide down very slowly so solution will not overflow. The total length of time for development is 20 minutes.

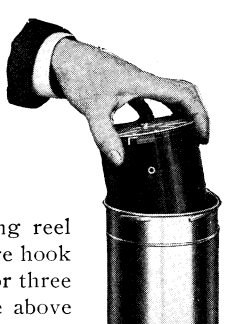


FIG. 3.

NOTE—Immediately after lowering reel into solution cup catch it with the wire hook and move gently up and down two or three times, but not allowing reel to come above surface of developing solution. This is to expel air bubbles.

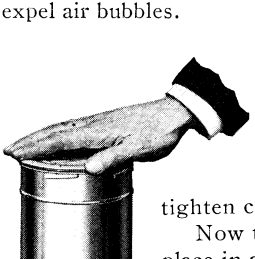


FIG. 4.

Allow development to proceed for about two minutes with cover of solution cup off ; then place the cover on the cup (Fig. 4) putting lugs on cover into grooves and tighten cover down by turning it to right.

Now turn the entire cup end for end and place in a tray or saucer to catch any slight leak from the cup. At the end of three minutes again reverse the cup, and thereafter reverse every three minutes until the time of development (20 minutes) has elapsed. Turning the solution cup allows the developer to act evenly and adds brilliancy and snap to the negatives.

14. The wire hook is to be used for lifting the reel out of the cup. Hook to the cross bar in one end of reel.

When the end of reel containing cross bar is at the bottom of cup, the hook is just long enough to catch the bar.

15. When developing is completed pour out developer and fill cup with clear, cold water, and pour off three times to wash the film.

When removing cover of solution cup, place cup in palm of hand so as to obtain a firm grip on bottom of can. Then grip cover with other hand and turn slowly to left, when cover will loosen readily. Then remove Transferring Reel, separate film from red paper and place immediately in the Fixing Bath which should be in readiness, prepared in accordance with directions on page 54.

The film may be separated from the tissue and red paper in the subdued light of an ordinary room if the developer is thoroughly washed out.

The operation of separating the film from the papers should be done over a bowl, bath tub or sink.

Any pieces of the tissue or paper that may adhere to the film when it goes into the fixing bath must be removed by gently rubbing with the wet finger before the film is washed and dried.

If the tank is not to be used again immediately, the apron and tank should be washed and wiped dry. The apron must always be perfectly dry when film is rolled up in same. The apron will dry almost instantly if immersed for a moment in hot water. Be careful, however, not to use extremely hot water or the apron will be liable to crack.

Keep apron wound on Transferring Reel when not in use. Never leave apron soaking in water.

IMPORTANT.

When cutting apart exposures made on Autographic Film after development, always leave the writing next to

the foreground of the adjoining negative in the case of vertical pictures, or at the left hand of the negative when looked at from the back, (the back is the shiny side), right side up, in the case of horizontal pictures.

The result is a negative bearing a facsimile of the memorandum written upon the back of the red paper, developed on its margin or face as the case may be. For it is obvious that by winding the film the width of a line the writing may be made to appear in the foreground of a vertical picture (of course the lower line must be written first) or on the left side of a horizontal picture.

TIME AND TEMPERATURE FOR TANK DEVELOPMENT.

It sometimes happens that the amateur is not able to obtain or maintain the standard or normal temperature of 65 degrees Fahr. when using the Kodak Tank and the Kodak Tank Developer Powders. In such cases the following table will be found of value:

Temperature	Time One Powder	Time Two Powders
70 degrees	15 Minutes	8 Minutes
69 "	16 "	
68 "	17 "	9 "
67 "	18 "	
66 "	19 "	
65 " NORMAL	**20 " NORMAL**	**10 " NORMAL**
64 "	21 "	
63 "	22 "	
62 "	23 "	11 "
61 "	24 "	
60 "	25 "	
59 "	26 "	12 "
58 "	27 "	
57 "	28 "	
56 "	29 "	13 "
55 "	30 "	
54 "	31 "	
53 "	32 "	14 "
52 "	33 "	
51 "	34 "	
50 "	35 "	15 "
49 "	36 "	
48 "	37 "	
47 "	38 "	16 "
46 "	39 "	
45 "	40 "	17 "

Temperature of Developer must not exceed 70 degrees Fahr., as above that point there is danger of the film frill-

ing. 45 degrees Fahr. is the lowest temperature at which the developing powders can be dissolved and even at this temperature the powder must be finely crushed and added slowly to the water.

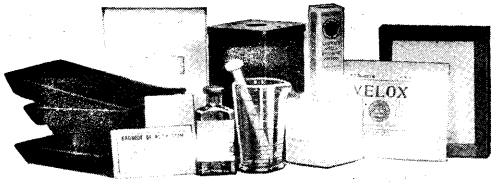
It is best to use the normal temperature (65 degrees) when possible, as the use of a developer that is colder than normal has a slight tendency to increase the contrast in a negative, while the use of a developer warmer than normal slightly flattens the resulting negatives.

DEVELOPING SEVERAL ROLLS OF FILM AT ONCE.

Several rolls of film may be developed at the same time if the operator wishes. To do this it is necessary to have a "Duplicating Outfit" consisting of 1 Solution Cup, 1 Transferring Reel and 1 Apron for each additional roll of film to be developed. The extra rolls of film may then be wound on to Transferring Reels as previously described and immersed in the Solution Cups.

DEVELOPING IN THE DARK-ROOM.

Provide an Eastman A B C Developing and Printing Outfit, which is suitable for any negative 4 x 5 or smaller.



A B C Developing and Printing Outfit.

The Outfit Contains:

1 Kodak Candle Lamp,	$ .25
4 Developing Trays,	.40
1 4-ounce Graduate,	.15
1 4 x 5 Printing Frame,	.25
1 4 x 5 Glass for same,	.05
1 Stirring Rod,	.05
1 Box (5 tubes) Eastman Special Developing Powders,	.25
½ pound Kodak Acid Fixing Powder,	.15
2 Doz. Sheets, 4 x 5, Regular Velvet Velox	.40
1 2-oz. bottle Nepera Solution, for developing Velox	.10
1 Package Potassium Bromide,	.10
	$2.15

Price, complete, (including Instruction Book) neatly packed, $1.50.

Also provide a pair of shears, a pitcher of cold water (preferably ice water), a pail for slops, and a *dark-room* having a shelf or table.

By a dark-room is meant one that is wholly dark—not a ray of light in it. Such a room can easily be secured at night almost anywhere. The reason a dark-room is required is that the film is extremely sensitive to white light, either daylight or lamplight, *and would be spoiled if exposed to it*, even for a fraction of a second.

Having provided such a room or closet, where, when the door is closed, no ray of light can be seen.

Set up on the table or shelf the Kodak Candle Lamp, as directed on the box in which the lamp is enclosed.

The lamp gives a subdued red light which will not injure the film unless it is held too close to it. Set the lamp on the table at least eighteen inches from the operator. Never use a yellow light with the film or fog will be the result.

1. Fill one of the trays nearly full of water (first tray).

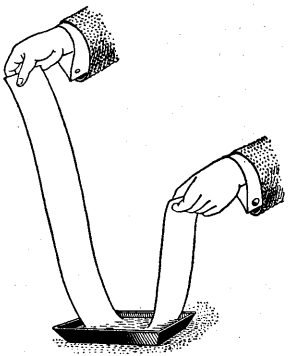
2. Open one of the developer powders, then put the contents (two chemicals), into graduate, and fill it up to the 4 ounce mark with water. Stir until dissolved with the wooden stirring rod and pour into the second tray.

NOTE—Proper temperature is important, and for the best results the developer should be at 65 degrees Fahr., and the fixing bath and wash water should be kept between 50 and 60 degrees Fahr. If the developer is too warm, the negatives are very liable to fog, and in many cases the emulsion will be softened and the surface will be very much more liable to injury through scratching. If the developer is too cold the chemical action is retarded, resulting in flat, weak negatives.

3. To develop, unroll the film and detach the entire strip from the tissue and red paper.

4. Pass the film through the tray of clean, cold water as shown in the cut, holding one end in each hand. Pass through the water several times, that there be no bubbles remaining on the film. When it is thoroughly wet, with no air bubbles, it is ready for development.

5. Now pass the film through the developer in the same manner as described for wetting it and shown in cut. Keep it constantly in motion, and in about one minute the high lights will begin to darken and you will readily be able to distinguish between the unexposed sections between the negatives, and in about two minutes will be able to distinguish objects in the picture. Complete development in the strip, giving sufficient length of development to bring out what detail you can in the thinnest negatives. There is no harm in having your



negatives of different density. This can be set right in the printing. The difference in density does not affect the difference in contrast.

Keep the strip which is being developed constantly in motion, allowing the developer to act 5 to 10 minutes. The progress of development may be watched by holding the negatives up to the lamp from time to time.

When developing the film, use a red lamp and take care not to hold the film close to the lamp for any length of time. This film is very rapid and is orthochromatic, therefore liable to fog unless handled very carefully.

6. After completing development transfer to the third tray and rinse two or three times with clear, cold water, then transfer to fixing bath.

NOTE—If preferred the negatives may be cut apart and fixed separately. Instructions for cutting apart Autographic Film will be found on page 48.

FIXING.

Provide a box of Kodak Acid Fixing Powder and prepare the fixing bath as per directions on the package. Put this into a tray (fourth tray of an Eastman developing outfit) or wash bowl. When the powder has thoroughly dissolved, add to the solution as much of the Acidifier, which you will find in a small box inside the large one, as directions call for. As soon as this has dissolved, the fixing bath is ready for use. Any quantity of the bath may be prepared in the above proportions.

Pass the film face down (the face is the dull side) through the fixing solution, holding one end in each hand. Do this three or four times and then place one end of the film in the tray still face down and lower the strip into the solution in folds. (If the negatives have been cut

apart, immerse them singly). Gently press the film where the folds occur, not tightly enough to crack it, down into the solution a few times during the course of fixing. This insures the fixing solution reaching every part of the film. Allow the film to remain in the solution two or three minutes after it has cleared or the milky appearance has disappeared. Then remove for washing.

Film must always be fixed in an acid bath. There is nothing superior to the Kodak Acid Fixing Bath, but the following formula may be used if desired:

ACID HYPO FIXING BATH.

Water, - - - - 64 ozs. Hypo, - - - - 16 ozs.

When thoroughly dissolved, add 4 ounces Velox Liquid Hardener, or the following hardening solution, dissolving the chemicals separately and in the order named:

Water, - - - - 5 ozs. | Acetic Acid (28%), - 3 oz.
E. K. Co. Sulphite of Soda, 1 oz. | Powdered Alum, - - 1 oz.

If preferred, 1 oz. Citric Acid can be substituted for Acetic.

This bath may be made up at any time in advance and may be used so long as it retains its strength, or is not sufficiently discolored by developer carried into it, to stain the negatives.

WASHING.

There are several ways of washing film. It may be placed in a tray or wash bowl of cold water, left to soak for five minutes each in 5 changes of cold water, moving about occasionally to insure the water acting evenly upon it, or it may be given, say two changes as above and then left for an hour in a bowl with a very gentle stream of water running in and out. If negatives have been cut apart keep them separated so they wash thoroughly.

DRYING FILM NEGATIVES.

When thoroughly washed, snap an Eastman Film Developing Clip on each end of the strip and hang it up to dry or pin it up. Be sure, however, that it swings clear of the wall so that there will be no possibility of either side of the film coming in contact with the latter. In drying, film should be cut up into strips *not more* than six exposures in length.

Instructions for cutting apart Autographic Film exposures are given on page 48.

In tray development when the film has been cut up, pin by one corner to the edge of a shelf or hang the negatives on a stretched string by means of a bent pin, running the pin through the corner of film to the head, then hooking it over the string.

Drying with Clips.

DEFECTIVE NEGATIVES.

By following closely the foregoing directions, the novice can make seventy-five per cent. or upwards of good negatives. Sometimes, however, the directions are not followed, and failures result.

To forewarn the camerist is to forearm him and we therefore describe the common causes of failure.

OVER-DEVELOPMENT.

Over-development may be caused by a mistake in leaving film in the developer too long: by using solution too warm or by those who mix their own developer in getting the developing agent too strong.

In this case the negative is very strong and intense by transmitted light and requires a very long time to print.

The remedy is to reduce by use of Eastman Reducer or the following method:

REDUCER.

First soak negative 20 minutes in water, then immerse in:

Water,	6 ounces.
Hypo,	½ ounce.
Potassium Ferricyanide (saturated solution),	20 drops.

Rock tray gently back and forth until negative has been reduced to the desired density, then wash 10 minutes in running water or in four changes of water.

Negatives may be reduced locally by applying the above solution to the dense parts with a camel's hair brush rinsing off the reducer with clear water occasionally to prevent its running onto the parts of the negative that do not require reducing.

UNDER-DEVELOPMENT.

An under-developed negative differs from an under-exposed one, in that it is apt to be thin and full of detail, instead of harsh and lacking in detail.

This defect would be caused by a mistake in removing film from the developer too soon, by using solution too cold or by an error in compounding chemicals. It is obvious that neither of these defects will occur in Tank Development if instructions are properly followed.

INTENSIFICATION BY RE-DEVELOPMENT.

There are a number of different processes for intensifying under-developed negatives, the most common being by means of Bichloride of Mercury, and Sodium Sulphite or Ammonia.

This method, though simple to use, has its disadvantages, as it builds up the high lights out of proportion to the weaker portions of the negative, and also, unless carefully handled is apt to produce iridescent stains, or granular markings that are impossible to remove.

While the method of intensification by re-development is only comparatively new, the now common use of Velox and Royal Re-developer for Sepia tones on Velox and Bromide prints will make this the most effective means of intensification.

Velox or Royal Re-developer may be used in exactly the same manner as for producing Sepia tones on developing paper.

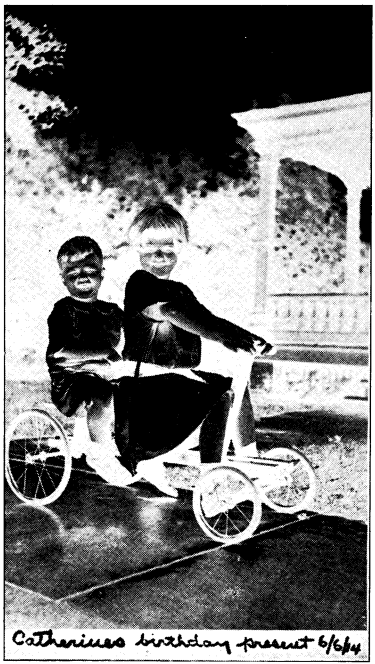
Negatives intensified by re-development are built up evenly, without undue contrast and without the chance of staining.

The advantage of being able to use the chemicals for two different purposes (Sepia toning prints or intensifying negatives) is obvious, the result in either case being all that could be desired.

PART V.

PRINTING.

THE USE OF AUTOGRAPHIC NEGATIVES.



Autographic Negative.

It is not a part of the Autographic plan that the record be made to appear upon the print, but such record may be reproduced in the print itself or omitted as desired. Of course if the record appears within the negative proper it will show on the print, if the print is full size. The illustration on this page will show how the record will appear on the negative.

The "Autographic Record Strip" (page 21) is printed merely to suggest a few of the thousand and one ways in which autographic records may be used to add value to your negatives.

PRINTING ON VELOX PAPER.

Film negatives yield beautiful, soft black and white effects when printed on Velvet Velox.

MANIPULATION.

Velox prints may be successfully made, using daylight for exposure. Select a north window, if possible, as the light from this direction will be more uniform. *Owing to its sensitiveness the paper should be handled in subdued light, otherwise it will be liable to fog.* Proper precautions should be taken to pull down the window shades and darken the room sufficiently during manipulation. If the light is too strong for printing it should be subdued or diffused by the use of several thicknesses of white tissue paper. Owing to the varying intensity of daylight, uniform results are not as certain as when using artificial light. In the following instructions for manipulating Velox, it must be understood that artificial light will be the light used. A kerosene lamp, fitted with a round burner (known as Rochester burner) may be used, but owing to the decidedly yellow light this affords, a considerably longer exposure will be necessary than when using a Mazda lamp.

The comparative exposures with Special Velox from an average negative using various sources of light are as follows:

NOTE—When using Regular or Contrast Velox increase the exposure.

Size of Negative.	Distance from Light	60 Watt Mazda	40 Watt Mazda	25 Watt Mazda	Welsbach Burner (Gas)	Average Oil Lamp
3¼ x 5½ 4 x 5 and Smaller	10 Inches	4 Seconds	6 Seconds	12 Seconds	16 Seconds	50 Seconds

Having provided a suitable light and a convenient place to work, arrange three trays before you on your work table in this order:

1 oz. Nepera Solution 4 ozs. Water	Clean Water	X	Kodak Acid Fixing Bath as directed on page 54
1	2	Towel	3

NOTE—Do not allow the direct rays of light used for printing to strike tray No. 1 which is used for developer. Place a piece of red or orange colored paper between the light and tray No. 1, so as to obtain a subdued and safe light. By doing so you will avoid fogging the paper during development.

Proper temperature is important and for best results the developer should be 70 degrees Fahr. and the fixing bath and wash water 50 degrees Fahr. If the developer exceeds 70 degrees the prints are liable to fog and the emulsion soften. If too cold, chemical action is retarded, resulting in flat, weak prints.

PRINTING.

Velox may be safely manipulated ten feet from the ordinary gas flame.

Having everything in readiness, open the printing frame and lay the negative back down upon the glass—(the back is the shiny side).* Place upon the negative a sheet of the Velox paper face down.

The paper curls slightly, the face or sensitive side being concave; an absolute test is to bite the corner of the sheet; the sensitive side will adhere to the teeth.

The paper not used must be kept covered in its envelope.

*The strips of gummed paper which are included with the Outfit, are to be used for fastening the negative in place on the glass of the printing frame, or to attach the negative to a mask, so as to prevent it from slipping, which would cause a dark streak to appear between the edge of the picture and the white margin.

Place the printing frame the correct distance from the artificial light used, holding the frame away from the burner a distance equal to the diagonal of the negative. See exposure table, page 60.

We suggest before making the first exposure, the cutting of a piece of Velox paper into strips about an inch wide and placing one of them over an important part of the negative, make the exposure, using your best judgment as to the distance from the light and the time of printing. Develop it, and if not satisfactory, try another strip, varying the time as indicated by the first result. When the desired effect is secured, you can make any number of prints from the same negative, and if the time of exposure, distance from light, as well as the time of developing are identical, all the prints should be equally good. By comparing your other negatives with the one you have tested, you will be able to make a fairly accurate estimate of exposure required by any negative.

After taking the exposed piece of paper from the printing frame, in a safe place previously selected, it is ready for development. The dry print should be immersed face up in the developer (Tray No. 1) and quickly and evenly covered with the solution. Contrast and Regular Velox should be developed not to exceed twenty seconds; Special Velox about twice as long. No exact time can be given, as the strength of developer used would make a difference in the time.

As soon as the image has reached the desired depth remove from the developer to the second tray and rinse for a moment, turning the print several times, then place it in the acid fixing bath (Tray No. 3) keeping the print moving for a few seconds, the same as was done when rinsing, so

as to give even and thorough fixing, preventing stains and other troubles. Leave the print in the solution until thoroughly fixed; this will take about fifteen minutes. When fixed remove from fixing bath and wash thoroughly for about an hour in running water, then dry. After drying, prints may be trimmed and mounted.

Do not use a fixing bath that has been used for fixing film.

You should be systematic in working, remembering that cleanliness is essential in photography. Care must be taken to prevent the Hypo fixing bath in any way getting into the tray containing the developer. Have a clean towel when beginning the work and wipe your hands each time after you have handled prints in fixing bath.

DETAILS.

CLEAN DISHES: CLEAN HANDS: The faintest trace of Hypo will spoil the prints if it gets into contact with them before the proper time. Great care should therefore be used to have both hands and trays clean.

DEVELOPER once used should not be carried over and used the next day or subsequently.

Don't.

Don't use a tray for developing which has previously been used for hypo solution, pyro developer or final washing.

Don't use an old fixing solution, it is liable to cause trouble.

Difficulties: Their Cause and Remedy.

VEILED WHITES: Caused by forcing development, fogged paper.

REMEDY: Give more time, screen light. Also caused when image flashes up in developer by too much exposure, in which case give less time.

MUDDY SHADOWS: Caused by developer being used for too many prints. Remedy, use fresh developer.

CONTRASTY PRINTS: Caused by insufficient time or negatives too harsh. Remedy, give more time; make softer negatives.

FLAT PRINTS: Caused by overtiming or negatives flat. Remedy, give less time in first instance, and if trouble is with negatives, give negatives less time; develop further.

STAINS: Caused by forcing development, or chemically dirty dishes or hands, insufficient fixing, foreign chemicals. Remedy, do not allow chemicals other than those given in formulae to come in contact with paper; use fresh fixing bath; keep prints in constant motion the entire 15 minutes they remain in fixing, and if due to forcing development give more time in printing.

ROUND, WHITE SPOTS: Caused by air bells which form on face of print when developer is first flowed on. Remedy, use more developer, break air bells with finger.

For further particulars, ask your dealer or write us for a copy of the "Velox Book."

COLORING VELOX PRINTS.

The various surfaces of Velox are particularly well adapted for coloring, and prints may be made extremely interesting through the many beautiful effects obtained by the use of Velox Transparent Water Color Stamps. No experience is necessary when using these colors and any amateur can secure excellent results as full directions accompany each set of stamps.

Put up in book form, they will be found most convenient. Each book contains twelve colors, arranged in perforated leaflets, making twenty-four stamps of each color.

The stamps will also be found most desirable for the coloring of Bromide enlargements, lantern slides, etc., and in fact for all work where perfect blending and transparency of color is required. See price list.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

PART VI.

MOUNTING.

The most satisfactory method for mounting prints is by the use of Kodak Dry Mounting Tissue, as by the use of this tissue the print lies perfectly flat in absolute contact even on the thinnest mount and absolutely without curl.

The tissue comes in flat sheets, dry, not sticky, and easy to handle, and the tissue being water-proof protects the prints from any impurities in the mount stock.

For multiple mounting and folders the tissue is ideal.

The process of mounting is as follows:

Lay the print on its face and tack to the back a piece of the tissue of the same size as the print by applying the point of a hot flatiron to small spots at opposite ends.

Turn the print face up and trim the print and tissue to the desired size. Place in proper position on mount and cover print with a piece of smooth paper and press the whole surface with a hot flatiron.

Press, don't rub.

The iron should be just hot enough to siss when touched with the wet finger. If the iron is too hot the tissue will stick to the mount and not to the print, if too cold the tissue will stick to the print and not to the mount.

Remedy: Lower or raise the temperature of the iron and apply again.

When mounting with paste, lay the wet print face down on a sheet of glass and squeegee off all the surplus water, then brush over the back with thin starch paste, lay the print on the mount, then cover the print with a clean piece of blotting paper and rub into contact with a squeegee or rubber print roller.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

PRICE LIST.

No. 3 Autographic Kodak with R. R. Lens and Kodak Ball Bearing Shutter for pictures 3¼ x 4¼ (not loaded),	$18.00
Do., fitted with Kodak Automatic Shutter and R. R. Lens,	23.00
No. 3 Autographic Kodak with F.7.7 Kodak Anastigmat Lens and Kodak Ball Bearing Shutter, for pictures 3¼ x 4¼ (not loaded),	23.00
Black Sole Leather Carrying Case, with strap,	2.75
Combination Back for Film or Double Plate Holders	3.50
Double Glass Plate Holders, 3¼ x 4¼, each,	1.00
Kodak Portrait Attachment No. 3, for use with No. 3 Autographic Kodak, with R. R. Lens,	.50
Do., No. 6 for use with No. 3 Autographic Kodak, with F.7.7 Kodak Anastigmat Lens,	.50
Kodak Color Filter No. 3 for use with No. 3 Autographic Kodak, with R. R. Lens,	.75
Do., No. 6 for use with No. 3 Autographic Kodak, with F.7.7 Kodak Anastigmat Lens,	.75
Kodak Sky Filter No. 3, for use with No. 3 Autographic Kodak, with R. R. Lens,	.75
Do., No. 6, for use with No. 3 Autographic Kodak, with F.7.7 Kodak Anastigmat Lens,	.75
Autographic Film Cartridge, A-118, 12 exposures, 3¼ x 4¼,	.70
Do., 6 exposures,	.35
Do., 2 exposures,	.15
Seed Dry Plates, 3¼ x 4¼, per doz.,	.45
Kodak Film Tank, 3½ inch,	5.50
Duplicating Outfit for same,	2.75
Kodak Tank Developer Powders for 3½ inch Tank, per pkg. ½ doz.,	.20

NOTE: Prices subject to change without notice.

Eastman Plate Tank, 4 x 5 or 3¼ x 5½, including Solution Cup, Plate Cage, Loading Fixture and Adjustable Kit for 3¼ x 4¼ plates,	$ 4.00
Eastman Plate Tank Developer Powders, for 4 x 5 Tank, per pkg. ½ dozen,	.20
Kodak Acid Fixing Powders, per lb.	.25
Do., per ½ lb.,	.15
Do., per ¼ lb.,	.10
Eastman Eikonogen Developer Powders (for dark-room development), per doz. pairs,	.50
Do., per ½ doz. pairs,	.25
Eastman Hydrochinon Developer Powders (do not stain the fingers), per doz. pairs,	.50
Do., per ½ doz. pairs,	.25
Eastman Pyro Developer Powders (for dark-room development), per doz. pairs,	.50
Do , per ½ doz. pairs,	.25
Eastman Hydrochinon, Eikonogen, Pyro and Special Developer Powders in sealed tubes, per box of 5 tubes,	.25
Glass Stirring Rod Thermometer,	1.00
Velox Paper, per dozen sheets, 3¼ x 4¼,	.15
Velox Transparent Water Color Stamps, complete booklet of 12 colors,	.25
Velox Transparent Water Color Stamp Outfit, consisting of Artist's Mixing Palette, three special Camel's Hair Brushes and one book of Velox Transparent Water Color Stamps, (12 colors),	.75
Eastman Printing Masks, for use with No. 3 Kodak Negatives, each,	.06
Nepera Solution (for developing Velox) 4 oz. bottle,	.28
Solio Paper, 2 dozen sheets, 3¼ x 4¼,	.20
Combined Toning and Fixing Solution for Solio, per 8 oz. bottle,	.50
Do., 4 oz. bottle (in mailing case, including postage 50 cents),	.30

NOTE: Prices subject to change without notice.

Eastman Reducer, per box 5 tubes,	$ .50
Royal Re-developer, per package 6 tubes,	.75
Eastman Flash Sheets, No. 1, per pkg. ½ doz.	.35
Do., No. 2,	.56
Do., No. 3,	.84
Kodak Flash Sheet Holder,	1.00
Kodak Dry Mounting Tissue, 3 doz. sheets, 3¼x4¼,	.10
Eastman Film Developing Clips (nickeled) 3½ in. per pair,	.25
Kodak Film Clips (wooden), 5 inch, per pair,	.15
Kodak Junior Film Clips, No. 1, each,	.12
Kodak Print Roller, Double, 6 inch,	.50
Flexo Print Roller, Single, 4 inch,	.20
Kodak Metal Tripod, No. 0,	2.75
Do., No. 1,	4.00
Do., No. 2,	4.50
Leather Carrying Case for Nos. 0, 1 or 2,	2.25
Leatherette Carrying Case for No. 0 and No. 1,	.75
Bulls-Eye Tripod,	1.50
Kodak Dark Room Lamp No. 2, ⅝ inch wick,	1.00
Eastman Film Negative Album, to hold 100 3¼ x 4¼ negatives,	1.00
Eastman Photo Blotter Book, for blotting and drying prints,	.40
Kodak Trimming Board, No. 2, capacity 7x7 inches,	.70
Ontario Mounts, for prints 3¼ x 4¼, per 100,	1.55
Do., per 50,	.80
The Agrippa Album, flexible loose leaf, 50 black linen finish leaves 7x11,	1.85
Developing only, 3¼x4¼, per roll of 12 exposures,	.35
Do., per roll of 6 exposures,	.20
Printing and mounting only, on Velox, each,	.09
Printing on Velox, unmounted, each,	.07

No orders executed for less than 25 cents.

NOTE: Prices subject to change without notice.

11 x 14 Bromide Enlargements, mounted on card, . $ 1.25
14 x 17 Bromide Enlargements, mounted on card, . 1.50

On enlargement orders, if, in our opinion the print will be improved by double mounting, we will do so at an additional charge of ten cents, triple mounted at fifteen cents.

NOTE: Prices subject to change without notice.

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ROCHESTER, N. Y.

Be Sure to Use Pure Chemicals

To get the best negatives from your films—to get the best prints from your negatives—it is imperative that the chemicals which you use be absolutely pure.

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