

FALCON
MANUAL.



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EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

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EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

MANUFACTURERS OF

Kodaks,
Kodets,
Bullet Cameras,
Bulls-Eye Cameras,
Falcon Cameras,
Eastman's Solio Paper,
Western Collodion Paper,
Eastman's Dry Plates,
Eastman's Permanent Bromide Paper,
Eureka Bromide Paper,
Eastman's Platino-Bromide Paper,
Eastman's Enameled Bromide Paper,
Eastman's Transparent Film,
Eastman's Transparency Plates,
Eastman-Walker Roll Holders,
View Cameras, Tripods and
Other Specialties.

BEFORE LOADING.

Before taking any pictures with the Falcon Camera read the following instructions carefully, and make yourself perfectly familiar with the instrument, taking especial care to learn the construction of the shutter. Work it for both time and instantaneous exposures several times before threading up the film.

As sent from the factory, each Falcon Camera is loaded with a spool of film for 12 exposures 2 x 2½ inches, but the film is not threaded up for use. In preparing to use the camera, therefore, remove the spool from the yoke and proceed as directed in Part I.

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. Until it has been developed and fixed, the film must never be exposed to white light (this includes gaslight, lamplight, etc.,) or it will be ruined. Throughout all the operations of loading and unloading, therefore, be extremely careful to keep the black paper wound tightly around the film to prevent the admission of light.

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PART I.

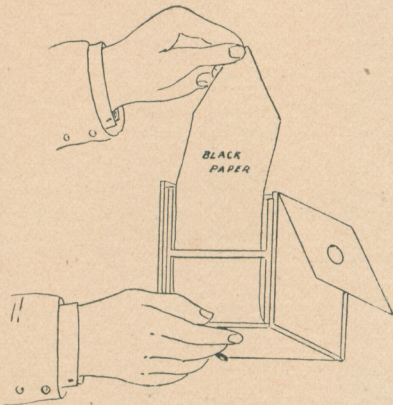
Loading the Camera.

THE FILM for the Falcon Camera is furnished in light-proof rolls and the instrument can therefore be loaded in daylight. The operation should, however, be performed in a subdued light, not in the glare of bright sunlight.

To Load.

- I. Take a position at a table as far as possible from any window ; pull out the brass catch at front of camera and take the roll holder from the box.
- II. Put the full spool into the recess at the front left hand corner of the camera, slipping the pins into place in the hole in axis of spool. Be sure and get the "*Top*" *at the top*. Each spool is marked on the end.

III. Cut the gum slip that holds the end of the paper and holding the thumb of the left hand firmly against the roll as shown in cut ; thread the black



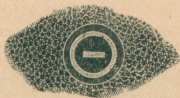
paper under the first cross piece and pull out beyond the end of camera seven inches. Pass under the pasteboard flap; under the second cross piece; thread into the slot in Reel, being

careful that the paper draws straight and true, and turn the Key until the paper is taut.

- IV. Insert the camera body in the case once more and push the brass catch into place.

Throughout the foregoing operations, from the time the gum slip is cut on the fresh roll of film, until the roll holder is once more in place in the case, keep the left hand bearing firmly on the roll, otherwise the roll will slip and loosen sufficiently to fog the film.

- V. The roll of film in the camera is covered with black paper and this must be reeled off before a picture can be taken. Turn the key slowly to the left and watch in the little red celluloid window in the back of camera. When 15 to 18 turns have been given, the figure 1 will appear before the window.



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

PART II.

Making the Exposures.

Snap shots can be made only when the bright sun shines directly on the object ; the camera may be in the shade but the *object* should not. The sun should never shine on the front of the camera while taking a picture.

To Take a Snap Shot.

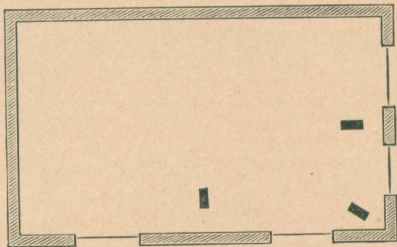
- First.** See that the line on the exposure lever at the upper right hand corner of the camera points parallel to front of camera. If it is necessary to turn it, simply pull up a trifle and it will be found to turn easily.
- Second.** Press the exposure lever to the left as far as it will go, and release it. *This sets the shutter.*
- Third.** Point the camera. The finder shows the scope of view.
- Fourth.** Hold the camera steady. Hold it level and push down on the exposure lever with the thumb. This takes the picture.

TURN THE FILM INTO POSITION.—Turn the key slowly to the left until the next number appears before the window. Three or four turns will be sufficient to accomplish this.

Repeat the foregoing operations for each picture.

Time Exposures Indoors.

1. *Put the Camera in Position.*



1. Diagram showing position of Camera.

Use some firm support, like a tripod or table. Set in such a position that the finder will embrace the view desired.

The diagram shows the proper position for the camera. 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 Camera.

To Make a Time Exposure.

First. See that that the line on the exposure lever at the upper right hand corner of the Camera points front.

Second. Press the exposure lever to the left as far as it will go, and release it. *This sets the shutter.*

Third. Push in on this same lever. *This opens the lens.*

The proper time to leave the shutter open depends upon the character of the subject and strength of the light. (See table below.)

Fourth. Push the lever again. *This closes the lens.*

Turn a new film in position as described before. (See page 6.)

For interiors, the following table is a good guide :

TIME NEEDED FOR INTERIOR EXPOSURES.

White walls, and more than one window :

bright sun outside, 2 seconds ;

hazy sun, 5 seconds ;

cloudy bright, 10 seconds ;

cloudy dull, 20 seconds.

White walls and only one window :

bright sun outside, 3 seconds ;

hazy sun, 8 seconds ;

cloudy bright, 15 seconds ;

cloudy dull, 30 seconds.

Medium-colored walls and hangings, and more than one window :

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

Medium-colored walls and hangings, and only one window :

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

Dark-colored walls and hangings, and more than one window :

bright sun outside, 10 seconds ;
hazy sun, 20 seconds ;
cloudy bright, 40 seconds ;
cloudy dull, 1 minute 20 seconds.

Dark-colored walls and hangings, and only one window :

bright sun outside, 20 seconds ;
hazy sun, 40 seconds ;
cloudy bright, 1 minute 20 seconds ;
cloudy dull, 2 minutes 40 seconds.

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

If earlier or later, the time required will be longer.

Time Exposures Outdoors.

When the light is very dull or weak, time exposures can be made outdoors. The time of exposure varies greatly from one half a second under a porch to 5 or 10 seconds under thick trees in the middle of the day. No exact directions can be given, but a little experience will teach the proper time of exposure for various subjects.

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

In General.

We recommend everyone to do their own developing. With our A B C outfit it is very simple and inexpensive, no regular dark room is required, and the operator can obtain proofs from the negatives as soon as they are dry.

If, however, the camerist prefers to have us "do the rest," he can send his Exposures to us either in the camera or take them out and send them by mail.

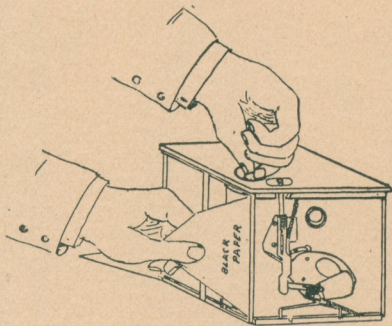
We have larger and better facilities and more skilled operators than anyone else, and it is to our interest to get the *best results from every negative.*

PART III.

Removing the Film.

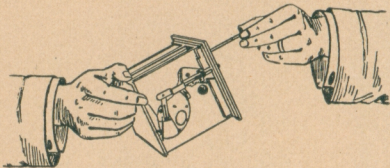
No dark room is required to change the spools in the Falcon Camera. The operation should, however, be performed in a subdued light.

- I. When the last film (No. 12) has been exposed give the key 12 or 15 extra 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. Pull out the catch at front and take the roll holder from the box.
- IV. Holding the black paper taut, so as to wind tightly, turn the key until the paper is all on the reel. (See opposite page.)

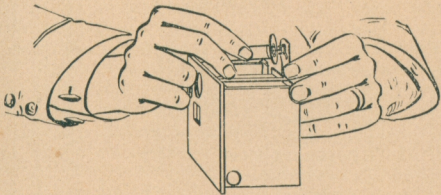


- V. Hold the reel tightly with one hand to prevent the paper from loosening; moisten the gummed end of the paper and stick it down to prevent paper from unwinding.

- VI. Loosen the key by turning to the right and pull it out.



- VII. Remove the roll from camera by swinging out the brass plate carrying ratchet wheel.
- VIII. Wrap up the roll immediately to prevent the light from injuring the film.
- IX. Now take the empty spool from its recess and attach it to the ratchet wheel, slipping the three pins on the wheel into the holes in end of spool. This forms the new reel.



- X. Insert the key and turn to the left until it is screwed firmly into the reel.
- XI. Load as described in Part I., page 3.

The roll of exposures can now be mailed to us for finishing, or you can do the developing and printing yourself.

PART IV.

Developing.

Provide an Eastman's *A B C Developing and Printing Outfit*, which contains:

- 1 Eastman's Candle Lamp,
- 4 Developing Trays,
- 1 Glass Beaker,
- 1 4 x 5 Printing Frame,
- 1 4 x 5 Glass for same,
- 1 Stirring Rod,
- ½ Dozen Developing Powders,
- ½ Pound Hyposulphite Soda,
- 2 Dozen Sheets 4 x 5 Solio Paper,
- 1 Bottle Solio Toning Solution,
- 1 Package of Bromide of Potassium,
- 1 Ounce Glycerine,
- 1 Package of Stickers.

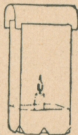
Also provide a pair of shears, a pitcher of cold water (preferably, ice water); a pail for slops, and a *dark room* having a shelf or table.

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:

1. Set up on the table or shelf the Orange Candle Lamp, and light it as directed in the circular which comes in the box in which the lamp is enclosed.

The lamp gives a subdued yellow or orange light which will not injure the film unless it is held close to it. Set the lamp on the table at least eighteen inches from and with the *side* toward the operator.



2. Unroll the film and cut the exposures apart as shown in Fig. 1.

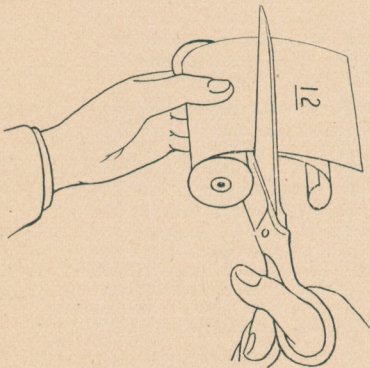


Fig. 1.--RIGHT.

In unrolling the film preparatory to development, care must be taken that the end be not allowed to roll up over the paper. The exposures should be cut apart with the *paper on top*. Do not let the fingers touch the face of the film. (The face is the dull side).

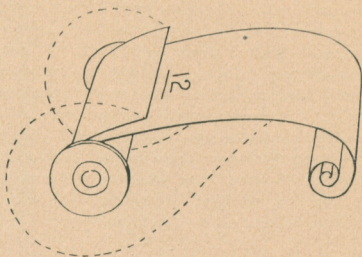


Fig. 11.—WRONG.

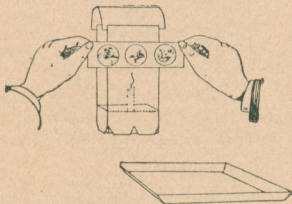
Fig. 2 shows a cartridge unrolled with the film on top. To correct this, simply turn back the film as indicated by the dotted lines, thus bringing the film under the paper.

3. Fill one of the trays nearly full of water, and put into it the exposures, one at a time, face down; put them in edgewise, to avoid air bells, and immerse them fully.

Cover the tray with a bit of brown paper to keep out the light from the lamp.

4. Open one of the developer powders and put the contents (two chemicals) into the beaker and fill it up to the ring with water. Stir until dissolved with the wooden stirring rod.

5. Take one of the exposures from the water and lay it face down in the second tray and pour upon it the developer. Rock it back and forth to prevent streaks and air bubbles. In about 1 minute the film will begin to darken in spots, representing the lights of the picture, and in about two minutes the operator will be able to distinguish objects in the picture. The developer should be allowed to act 5 to 10 minutes. The progress of the development may be watched by holding the negative, from time to time up to the lamp.



6. Transfer the developed film to the third tray and rinse two or three times with water, leaving it to soak while the next film is being developed.

Six or eight negatives can be developed one after the other in one portion of developer; then it should be thrown away and a fresh portion mixed.

Only one exposure should be developed at a time until the operator becomes expert, then he can manage three or four in the tray at one time and the developer will answer for 12 or 15 negatives before being exhausted.

As each successive negative is developed it should be put, with the preceding negatives, in the washing tray and the water changed twice, to prevent the developer remaining in the film from staining them.

7. Put two tablespoonfuls of Hyposulphite of Soda into the fourth tray, fill two thirds full of water, and stir until dissolved. This is called the fixing bath.
8. Immerse the negatives one by one in the fixing bath until they are entirely clear of white spots and are transparent instead of milky by transmitted light. This will require about 10 minutes.
9. The yellow shade can be removed from the lamp as soon as all the exposures have been fixed.
10. Pour off the fixing solution into the slop bucket, and fill the tray with clear, cold water, repeat this at intervals of five minutes, five or six times, keeping

the negatives in motion or transferring them back and forth to tray No. 3, one by one, to ensure the water acting evenly upon them.

The fixing solution must only be used in tray No. 4, and the negatives, after fixing, must not be put in either No. 1 or No. 2 trays. Neither must any of the fixing solution be allowed to touch the films, through the agency of the fingers, or otherwise, until they are ready to go into the fixing bath, otherwise they will be spotted or blackened, so as to be useless.

11. When the negatives are thoroughly washed, put one half ounce of glycerine into one pint of water (four portions measured with the developer glass), stir well and soak the negatives in the solution for five minutes, then remove them and wipe off the surplus moisture with a soft, damp cloth, and pin them by the four corners, face up, to a flat surface to dry.

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 failure results.

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

Under-Exposure.

Caused by making snap shots indoors, or in the shade, or when the light is weak, late in the day, or by closing the lens too soon on time exposures.

Under-exposure is evidenced by slowness in the appearance of the image in development, and the absence of detail in the shadows. In under-exposure the sky appears black in development, and the rest of the negative remains white, with no detail.

Over-Exposure.

Caused by too much light.

Negative develops evenly, shadows almost as fast as high lights. No contrast and no deep shadows. Over-exposure can be overcome in the development by the addition of Bromide of Potassium to the developer. The printing and developing outfit includes a package of bromide, with directions for its use. The novice will soon learn to recognize over-exposure, and to apply the remedy.

After the bromide has been added to the developer, it should not be used for another negative, unless it is known to have been over-exposed.

Fog.

Caused by white light in the dark room, or holding the film too long in the lamplight. (Even the yellow light from the lamp will fog the film after a time.)

Fog causes the film to blacken all over soon after the developer is applied; and if the fog is considerable it obliterates the image entirely.

Over-Development.

Caused by leaving the negative too long in the developer.

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

Under-Development.

Caused by removal from the developer too soon.

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. If the development is carried on as before directed, this defect is not liable to occur.

Spots, Streaks, Etc.

Air bells on the film in the developer or fixing bath are liable to cause spots; and streaks are caused by allowing the film to remain uncovered in part by the various solutions while in them.

White, milky spots are evidence that the negative has not been properly fixed, and the negative should be put back into the fixing bath and then re-washed.

PART V.

Printing and Toning.

The Solio paper which we now furnish with our outfits is readily handled by any amateur, and the results are far more satisfactory than can be obtained on any other printing-out paper. Solio prints have a warm, brown tone and are usually mounted on cardboard, and highly burnished, but they can be given a dead finish, if desired.

Method of Printing.

1. Open the printing frame of the A B C outfit and lay the negatives back down upon the glass—the back is the shiny side.
2. Place upon them a piece of Solio paper, face down.

NOTE.—The paper furnished with the A B C outfit is 4 x 5 inches. By carefully quartering this one sheet will answer for four Falcon Prints. In ordering additional paper it can be had ready cut to the proper size.

3. Replace the back of the frame and secure the springs. The back is hinged to permit of uncovering part of the print at a time to inspect it without destroying its register with the negative. The operation of putting in the Sensitive Paper must be performed in a subdued light, that is to say, in an ordinary room as far as possible from any window. The paper not used must be kept covered in its envelope.

4. The printing frame, when filled as directed, is to be laid glass side up in the strongest light possible (sunlight preferred) until the light, passing through the negative into the Sensitive Paper, has impressed the image sufficiently upon it. The progress of the printing can be examined from time to time by removing the frame from the strong light, and opening one half of the hinged back, keeping the other half fastened to hold the paper from shifting. The printing should be continued until the print is a little darker tint than the finished print should be.

5. Place the prints without previous washing in the following combined toning and fixing bath:

2 oz. Eastman's Solio Toning Bath.

4 oz. *Cold Water.*

Pour the toning solution into one of the trays and immerse the prints one after the other in the toning

bath. Five or six sheets can be toned together if they are kept in motion and not allowed to lie in contact. Turn the prints all face down and then face up, and repeat this all the time they are toning. The prints will begin to change color almost immediately from reddish brown to reddish yellow, then brown to purple. The change will be gradual from one shade to another, and the toning should be stopped when the print gets the shade desired.

Six ounces toning solution will tone two dozen of the 4 x 5 sheets; after that a new solution should be made same as before.

6. When the proper shade has been attained in toning bath the prints should be transferred for five minutes to the following salt solution to stop the toning:

Salt, 1 oz.

Water, 32 ozs.

7. Then transfer the prints to the washing tray and wash one hour in running water, or in 16 changes of water.
8. The prints can then be laid out and dried between blotting paper, and they may be mounted on card if desired.

PRICE LIST.

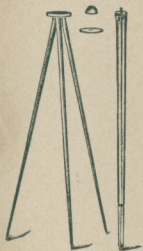
Falcon Camera, loaded with film for 12 exposures 2 x 2½ in., - - -	\$6 00
Light Proof Film Cartridge, 12 exposures, 2 x 2½, - - -	40
Black Sole Leather Carrying Case, -	1 00
Staff Tripod, - - - -	1 50
A B C Developing and Printing Outfit, including Solio paper and Toning Solution for 24 prints, - - -	1 50
Solio paper, 2 x 2½ per pkg, 2 doz. sheets,	15
Combined Toning and Fixing Solution for Solio, per 8 oz. bottle, - - -	50
Eastman's Eikonogen Developer Powders, per dozen, - - -	50
Hyposulphite Soda, pulverized, per pound,	10
Bromide Potassium, per oz. bottle, - -	15
Developing and Printing, 1 roll of 12 exposures,	80
Developing only, each, - - - -	03
Printing only, each, - - - -	04
On orders for developing and printing less than one dozen, 25 cents extra will be charged.	

Enlargements.

10 x 12 Bromide enlargements from Falcon negatives, mounted on card, - -	\$1 00
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The Improved Staff Tripod.

A very convenient Tripod for 4 x 5 cameras or smaller. Especially adapted to use with the Falcon Camera. It does not fold but closes together, forming a staff or cane.



Strong,

Light, . . .

Convenient. . .

Made of best seasoned maple, with accurately milled brass fittings.

Length, 48 inches.

Weight, 17 ounces.

Price of Improved Staff Tripods, \$1.50.

Illustrated Tripod Catalogue free.

⋮ *Folding Tripods* ⋮
\$2.00 to \$5.00.
⋮ *Ten styles and sizes.* ⋮

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.