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EASTMAN'S

Cartridge

Roll Holder

Manual.

EASTMAN KODAK CO.

ROCHESTER, N. Y.

KODAK.
Trade Mark, 1888.

EASTMAN KODAK COMPANY,

ROCHESTER, N. Y.

MANUFACTURERS OF

Kodaks,
Cartridge Roll-Holders,
Eastman's Solio Paper,
Western Collodion Paper,
Eastman's Dry Plates,
Eastman's Royal Bromide Paper,
Eastman's Standard Bromide Paper,
Eastman's Platino Bromide Paper,
Eastman's Enameled Bromide Paper,
Eastman's Matte-Enamel Bromide Paper,
Eastman's Transparent Film,
Eastman's Transparency Plates,
Tripods and
Other Specialties.

April, 1898.

EASTMAN'S CARTRIDGE ROLL HOLDER MANUAL.



EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

EASTMAN PHOTOGRAPHIC MATERIALS COMPANY, LTD.,
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115-117 Oxford Street, London.
60 Cheapside, London.

EASTMAN KODAK SOCIÉTÉ ANONYME FRANÇAISE,
Place Vendôme 4, Paris.
Avenue de l'Opéra 5, Paris.

EASTMAN KODAK GESELLSCHAFT, m. b. H.
Markgrafen Strasse 91, Berlin.

NOTICE.

Owing to the difference in winding,
Kodak Cartridges will not fit the
Cartridge Roll Holders, and Roll
Holder Cartridges will not fit the
Kodaks.

BEFORE LOADING.

Before using the Cartridge Roll Holder read this Manual carefully, that you may fully understand how to operate it. We do not attempt herein to give instructions as to any of the operations of the camera. Exposures on Eastman's Transparent Film are made in exactly the same manner as on plates. The following pages, therefore, are given up entirely to the operation of the Roll Holder itself.

Throughout all the operations of loading and unloading, the user should bear in mind that the black paper on the Cartridges must be kept wound tightly or it will slip and loosen sufficiently to instantly fog the film.

It is of course taken for granted that whatever camera is used, the Roll Holder will be properly fitted to it before operations are begun.

EASTMAN KODAK CO.

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PART I. LOADING.

PART II. REMOVING THE FILM.

PART III. DEVELOPING.

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PART I.

LOADING THE CARTRIDGE ROLL HOLDER.

The film for the Cartridge Roll Holder is furnished in light proof rolls, and it can therefore be loaded in daylight. The operation should, however, be performed in a subdued light, not in the glare of bright sunlight.

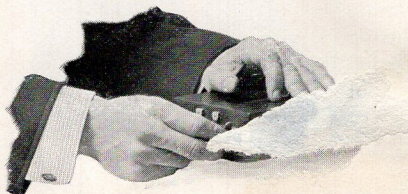


FIG. 1.

I. Having provided an Eastman light-proof film cartridge to fit this Roll Holder, (see page 2) take a position at a table as far as possible from any window,

and turning to the right on the key, pull it out to the limit of motion.

II. Pull upward on the aluminum lock as shown in Fig. 2, and remove the carrier from its outer case as shown in Fig 3.

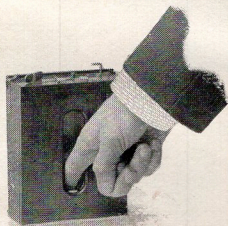


FIG. 2.

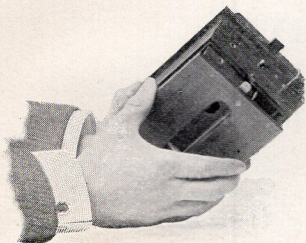


FIG. 3.

wooden pin at bottom (See Fig. 4) and inserting the hub in brass tension plate in slotted end of reel. See Fig. 5.

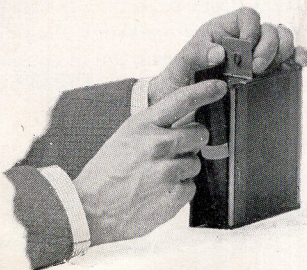


FIG. 4

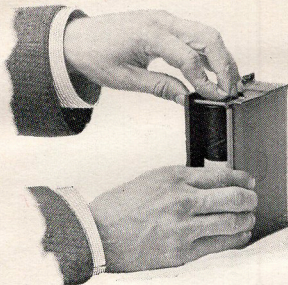


FIG. 5

III. Throw back the brass plate at top of recess on right side of carrier, and insert the film cartridge in place, fitting the round hole in axis of spool onto the

IV. Cut the gum slip that holds the end of the paper and pass the black paper across the rollers and thread into slot in reel as shown in Fig. 6.

V. Press on the ratchet wheel and give one or two slight turns

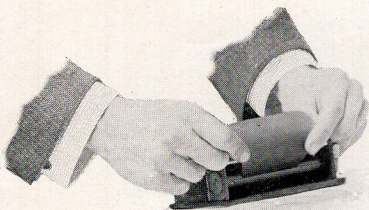


FIG. 6.

make the paper draw taut. (See Fig. 7.)

VI. Re-insert the carrier in case and lock by pushing down on aluminum catch as shown in Fig. 8.

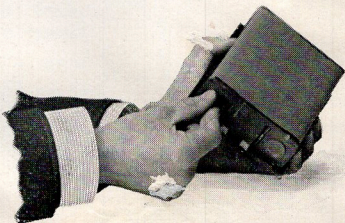


FIG. 7

VII. Spring key back into position and turn to the left until it is seated in place.

VIII. Now turn the key slowly to the left and watch carefully in the little red window in the slot at back of Roll Holder until the figure

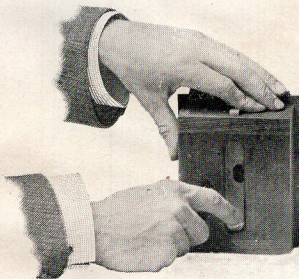


FIG. 8.

1 appears. (The figures are in white upon the black paper.) About one dozen turns will accomplish this.

IX. With the left hand press the little lever at the top of Roll Holder near the key to the front to the limit of motion, *at the same time* turning to the left on key. See Fig. 9. This locks the film in position and the key will turn about one-eighth of a revolution, taking up all slack and causing the film to lie perfectly flat.

The roll holder may now be inserted in the camera, the dark slide removed and exposure made the same as with plates. (The dark slide need not be reinserted until it is desired to remove the roll holder from the camera.)

X. Having made the first exposure release the lock by pushing lever back to opposite end of slot, turn the key until figure 2 appears before the window, again lock film as described in paragraph IX.

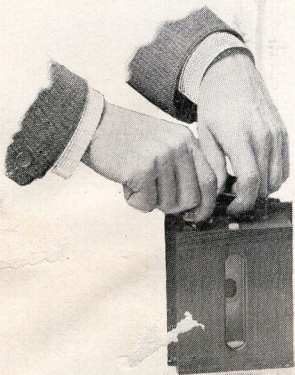


FIG. 9.

Repeat foregoing operations for each exposure.

PART II.

REMOVING THE FILM.

No dark room is required in changing the spools in Cartridge Roll Holder. The operation should, however, be performed in a subdued light.

I. When the last film (No. 12) has been exposed, turn the key until it will turn no further or about 15 half turns to the left and remove the Roll Holder from camera.

II. Provide an extra spool of film to fit this Roll Holder and take a position at a table as far as possible from any window.

III. Open the Roll Holder as before described.

IV. With a knife cut the black paper where it is attached to the now empty spool as shown in Fig. 1, holding the paper tightly with the left hand in so doing, that it may not loosen on the reel and fog the film.

NOTE: In passing from the spool to the reel the paper is reversed, being rolled on the reel in ex-



FIG. 1.

actly the opposite way from which it is rolled on the original cartridge with the result that it has a tendency if left without tension to unroll and expose the film to light. *It must therefore be kept tightly wound on the spool throughout the operation of unloading or the film will be ruined.*

V. Holding the black paper taut with the left hand, bear on the ratchet wheel with the thumb and first finger of the right hand and turn to the left (see Fig. 2) until the paper is all on the reel and fasten it securely by moistening the gummed end and sticking it down.

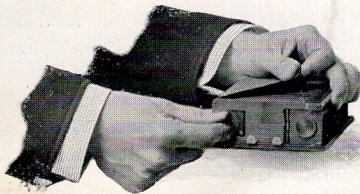


FIG. 2.

VI. Throw back the brass tension plate as shown in Fig. 3 and take out the exposed roll, snapping a rubber band about it to hold the paper securely and wrap up immediately to prevent damage from light.

VII. Now take out the empty spool as shown in Fig. 4 and transfer it to the recess at winding side, fitting

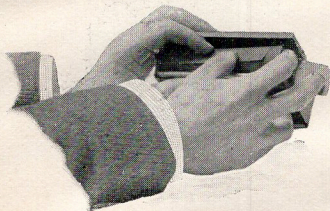


FIG. 3.

the slotted end of spool into the hub in tension plate as shown in Fig. 5. Swing the spool into the recess and fit into position. This forms the new reel and the holder may be loaded as described in part I, page 5.

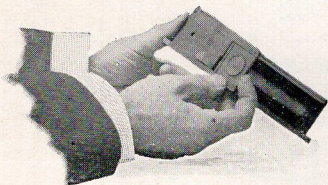


FIG. 4.

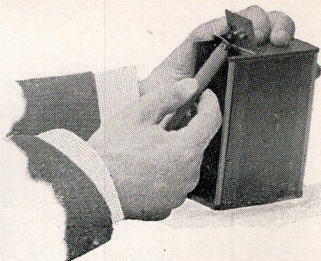


FIG. 5.

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

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

IN GENERAL.

We recommend every one to do their own developing. With our outfits 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 amateur prefers to have us "Do the rest," he can send his exposures to us by mail.

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

Kodak Cartridges will not fit Cartridge Roll Holders and vice versa.

PART III.

DEVELOPING.

Provide an Eastman Developing and Printing Outfit. Bulls-Eye for $3\frac{1}{2} \times 3\frac{1}{2}$, A B C for 4×5 , or 5×7 Special for 5×7 films.



THE A B C OUTFIT CONTAINS:

1 Eastman Candle Lamp, \$.25	1/2 Pound Hyposulphite Soda, \$.07
4 Developing Trays, - .40	2 Dozen Sheets 4×5 Solio
1 Glass Beaker, - .12	Paper, - - - .30
1 4×5 Printing Frame, - .25	1 2 oz. Bottle Solio Toning
1 4×5 Glass for same, - .05	Solution, - - - .15
1 Stirring Rod, - .05	1 Package Bromide Potassium .10
1/2 Dozen Developer Powders .25	1 Ounce Glycerine, - .05
	\$2.04

**Price, complete, neatly packed, \$1.50.*

BULLS-EYE OUTFIT, similar to above, but complete for 12	
pictures $3\frac{1}{2} \times 3\frac{1}{2}$, only, - - - -	\$1.00
Eastman's 5×7 Special Outfit, complete for 24 pictures 5×7 , -	2.00

**These outfits cannot be shipped by mail.*

NOTICE.—The following directions are for 4 x 5 films. Special directions for *developing* and printing accompany the Bulls-Eye and 5 x 7 Special outfits. *Always follow these directions for cutting up Cartridge Roll Holder Films.*

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 :

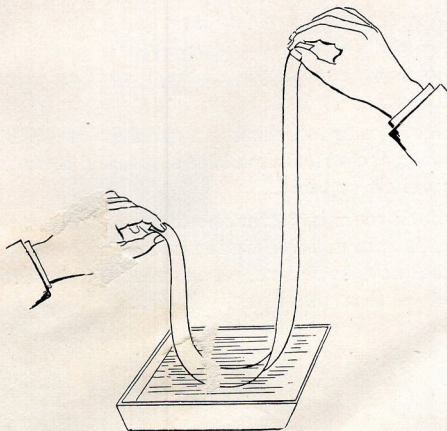
I. Set upon the table or shelf the Orange Candle Lamp, and light it as directed in the circular which comes in the box in which the lamp is enclosed.



THE LAMP.

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.

II. Unroll the paper and detach the film from it.



III. Cut the strip of film apart at point where perforations occur in the middle. The object of this is so that it may be the more readily handled.

IV. Fill one of the trays with water and pass each of the two strips of film through it, face down (the face is the dull side) as shown in the cut, holding one end in each hand. Pass through the water several times, that there may be no bubbles remaining on the film. When thoroughly wet, with no air bubbles, place the strips of film in the tray of water, immersing fully but not folding tightly so as to crack.

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

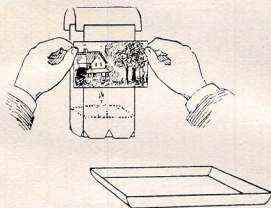
V. Open one of the developer powders and put the contents (two chemicals) into the beaker and fill it up to the ring with water. Stir until dissolved with the wooden stirring rod and pour into second tray.

VI. Now pass the film through the developer in the same manner as described for wetting 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 the unexposed sections between the negatives.

VII. With a pair of shears cut the negatives apart and place them face down, in the tray of *clear water*. They may now be developed one at a time.

To avoid curling, always develop film face down.

VIII. Take one of the exposures from the water and immerse it in the developer *face down*. Rock it back and forth to prevent streaks and air bubbles; in about 1 minute 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 light.



IX. 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.

NOTE: Eight or ten 4 x 5 negatives can be developed, one after the other, in one portion of the developer; then it should be thrown away and a fresh portion mixed.

Only one negative 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 twenty-four 4 x 5 films before being exhausted.

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

X. 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.

XI. 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.

XII. The yellow shade can be removed from the lamp as soon as all the exposures have been fixed.

XIII. 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.

XIV. 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 5 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.

The glycerine solution may be used repeatedly.

The trays and beaker should now be rinsed out and set away to drain and dry.

When the negatives are dry, they are ready for printing, as described in Part IV.

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 amateur 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.

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 rewashed.

To avoid curling, always
develop film face down.

PART V.

PRINTING ON EASTMAN'S SOLIO PAPER.

Having found that amateurs can easily handle our Solio Paper we have now substituted it for the Ferro-Prussiate Paper, which we formerly furnished with our outfits & it makes far handsomer pictures than the blue prints.

Solio prints have a warm, brown tone and are usually mounted on cardboard and highly burnished.

METHOD OF PRINTING.—Open the printing frame and lay the negative back down upon the glass (the back is the shiny side). Place upon this a piece of Solio Paper face down. Replace the back of the frame and secure the springs. The back is hinged to permit of uncovering part of the print so as 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.

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 photograph should be. Place prints without previous washing in the following combined toning and fixing bath:

2 oz. Eastman's Solio Toning Solution.

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

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 oz.

Then transfer the prints to the washing tray and wash one hour in running water, or in 16 changes of water.

The prints are then ready for mounting or they can be laid out and dried between blotting papers.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

PRICE LIST.

No. 2 Cartridge Roll Holder for Eastman's Light-Proof Roll Holder Cartridges $3\frac{1}{2} \times 3\frac{1}{2}$,	\$ 5 00
No. 4 Horizontal Cartridge Roll Holder for Eastman's Light-Proof Roll Holder Cartridges 4×5 (4 inch spool), - - - - -	5 00
No. 4 Vertical Cartridge Roll Holder for Eastman's Light-Proof Roll Holder Cartridges 5×4 (5 inch spool), - - - - -	5 00
No. 5 Cartridge Roll Holder for Eastman's Light-Proof Roll Holder Cartridges 7×5 (7 inch spool), - - - - -	6 50
*Eastman's Light-Proof Film Cartridge, 12 Ex. $3\frac{1}{2} \times 3\frac{1}{2}$, to fit No. 2 Cartridge Roll Holder,	60
*Eastman's Light-Proof Film Cartridge, 12 Ex. 4×5 (4 inch spool), to fit No. 4 Horizontal Cartridge Roll Holder, - - - - -	90
*Do., (5 inch spool), to fit No. 4 Vertical Cartridge Roll Holder, - - - - -	90
*Eastman's Light-Proof Film Cartridge, 12 Ex. 7×5 (7 inch spool), to fit No. 5 Cartridge Roll Holder, - - - - -	1 60
Eastman's Bulls-Eye Developing and Printing Outfit for $3\frac{1}{2} \times 3\frac{1}{2}$ Pictures, - - - - -	1 00
Eastman's A B C Developing and Printing Outfit for 4×5 Pictures, - - - - -	1 50
Eastman's 5×7 Special Developing and Printing Outfit for 5×7 Pictures, - - - - -	2 00
Eastman's Improved Orange Candle Lamp, -	25
No. 1 Kodak Dark Room Lamp, 1 inch wick, -	1 50
*In ordering, be sure and specify that films are for Cartridge Roll Holders. The Kodak Cartridges will not fit the Cartridge Roll Holders.	

No. 2 Kodak Dark Room Lamp, $\frac{5}{8}$ inch wick,	\$ 1 00
Combined Toning and Fixing Solution for Solio, per 8 ounce bottle,	50
Toning and Fixing Solution can be shipped by mail in 4 ounce bottles as follows: 4 ounce Toning Solution. (<i>20c. extra postpaid.</i>)	25
Eastman's Hydrochinon Developer Powders, per dozen,	50
Hyposulphite Soda, pulverized, per pound,	10
Bromide Potassium, per ounce bottle,	15
Developing, Printing and Mounting, each, $3\frac{1}{2} \times 3\frac{1}{2}$,	12 $\frac{1}{2}$
Developing only, each, $3\frac{1}{2} \times 3\frac{1}{2}$,	06
Printing and Mounting only, each, $3\frac{1}{2} \times 3\frac{1}{2}$,	08
Developing, Printing and Mounting, each, 4×5 ,	15
Developing only, each, 4×5 ,	08
Printing and mounting only, each, 4×5 ,	10
Developing, Printing and Mounting, 5×7 , each,	20
Developing only, each, 5×7 ,	10
Printing and Mounting only, each, 5×7 ,	12 $\frac{1}{2}$
On orders for developing and printing less than one dozen, 25 cents extra will be charged.	
Actino Flash Lamps, each,	1 25
Actino Flash Powder, per ounce,	60
Eastman's Photo Paste, per 3 ounce tube,	15
Do., per 5 ounce tube,	25
Eastman's Indexed Negative Album to hold 100, $3\frac{1}{2} \times 3\frac{1}{2}$ Film Negatives,	75
Do. to hold 100, 4×5 ,	1 00
Do. to hold 100, 5×7 ,	1 50

EASTMAN KODAK CO., Rochester, N. Y.

TERMS.

The prices given herein are strictly net, except to regular dealers who carry our goods in stock.

All prices are f. o. b. at Rochester. We make no charge for packing.

For the convenience of our customers we recommend that they make their purchases from a dealer in photographic goods, as by so doing they can save both time and expressage, but where orders are sent direct, remittances must be by New York draft, express order, postal order, or currency (if currency, letter must be registered). Amounts less than one dollar may be remitted in postage stamps. We do not accept personal checks.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

EASTMAN PHOTOGRAPHIC MATERIALS CO., LTD.

43 Clerkenwell Road, }
115-117 Oxford St. } LONDON.
60 Cheapside, }

EASTMAN KODAK SOCIÉTÉ ANONYME FRANÇAISE.

Ave. de l'Opera 5, }
Place Vendôme 4, } PARIS.

EASTMAN KODAK GESELLSCHAFT, m. b. H.

Markgrafen Strasse 91, BERLIN.

There is no Kodak but
the Eastman Kodak.