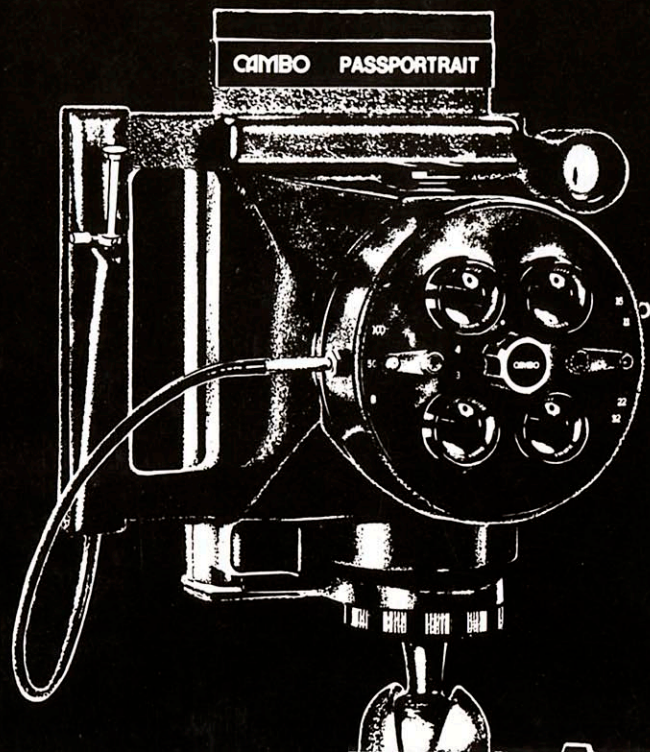


CAMBO

How to use the Cambo Passport camera



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Introduction

The Cambo Passportrait multiple-image instant picture camera is designed specially for making high quality identification pictures and miniature portraits that are available to the customer moments after the exposure is made. Time consuming and costly darkroom work is eliminated and, as the customer is handed his prints right away, much tedious book work is also made unnecessary.

The camera uses Polaroid Land films, both colour and black and white.

There are five different models of Passportrait cameras — Model 40 - 20 - 25 - 44 and 45. Their basic operation is identical, and the Model 40 is featured throughout this book. Illustrations of the other two models are also included, together with their major features. Wherever there are important differences in operation, these are pointed out.

The Models 40 and 44-45 have four lenses and produce four pictures on each sheet of film.

The Models 20-25 have two lenses, giving two pictures on each sheet. On each camera, the lenses are accurately matched so that, if all the pictures on one sheet of film are taken simultaneously, the images will be virtually identical. The lens aperture is set simultaneously for all the lenses. The between-the-lens shutters are designed to give each picture the same exposure, either simultaneously or consecutively, as desired. The shutter speeds are 1/100 sec. and 1/50 sec., and there is a "B" setting which enables the shutters to be kept open for any desired length of time. The shutters are "X" synchronized, for use with electronic flash.

The Passportrait camera has been designed for the easiest possible operation. If you follow the instructions in this book you need no great photographic skill to produce quality identification pictures or miniature portraits.

The serial number of each camera is located next to the tripod socket.

Model 20

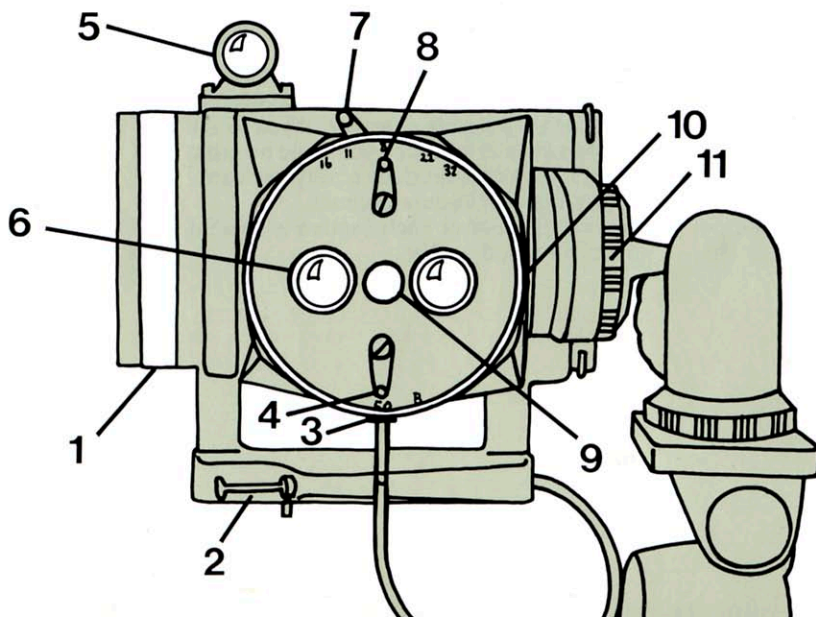
1. Polaroid Land pack film holder (removable)
2. Cable release, with locking screw
3. Cable release socket
4. Shutter control lever
5. Optical viewfinder
6. Two 125 mm f/8 lenses
7. Shutter cocking lever
8. Aperture control lever
9. Shutter sequence selector knob
10. Electronic flash contact
11. Tripod socket

Focusing method: Measure distance. Focus is fixed on subject at distance of 1.20 m (48 in.) from camera front.

Film types used: Polaroid Series 100 Land pack films.

Format of each image: 46 x 72 mm.

EACH PRINT PROVIDES 2 IMAGES.



Model 40

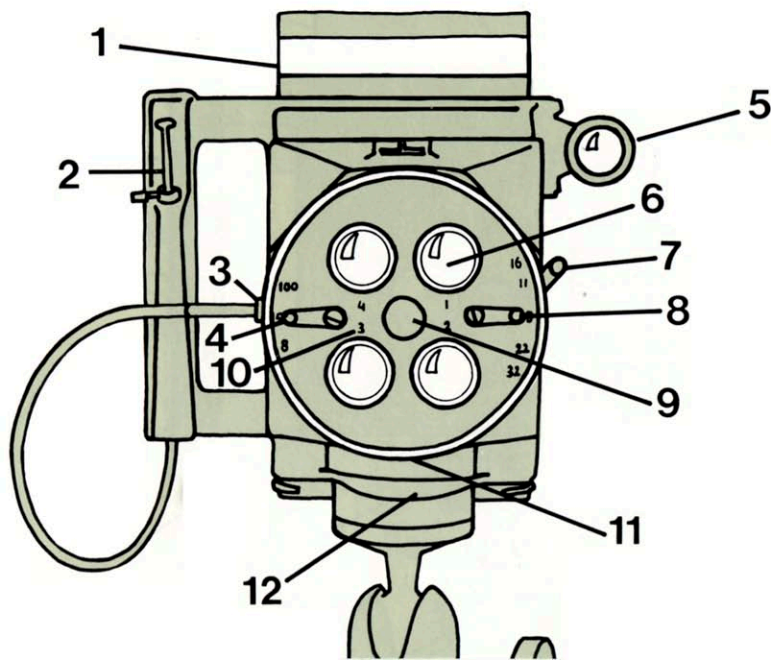
1. Polaroid Land pack film holder (removable)
2. Cable release, with locking screw
3. Cable release socket
4. Shutter control lever
5. Optical viewfinder
6. Four 125 mm f/8 lenses
7. Shutter cocking lever
8. Aperture control lever
9. Shutter sequence selector knob
10. Lens sequence numbers
11. Electronic flash contact
12. Tripod socket

Focusing method: Measure distance. Focus is fixed on subject at distance of 1.20 m (48 in.) from camera front.

Film types used: Polaroid Series 100 Land pack films.

Format of each image: 36 x 46 mm.

EACH PRINT PROVIDES 4 IMAGES.



Model 25

1. 4 x 5 camera back with ground glass focusing screen. Will take Polaroid 4 x 5 Land film holder or wet-process 4 x 5 film holders
2. Cable release, with locking screw
3. Cable release socket
4. Shutter control lever
5. Optical viewfinder
6. Two 125 mm f/8 lenses
7. Shutter cocking lever
8. Aperture control lever
9. Shutter sequence selector knob
10. Electronic flash contact
11. Tripod socket

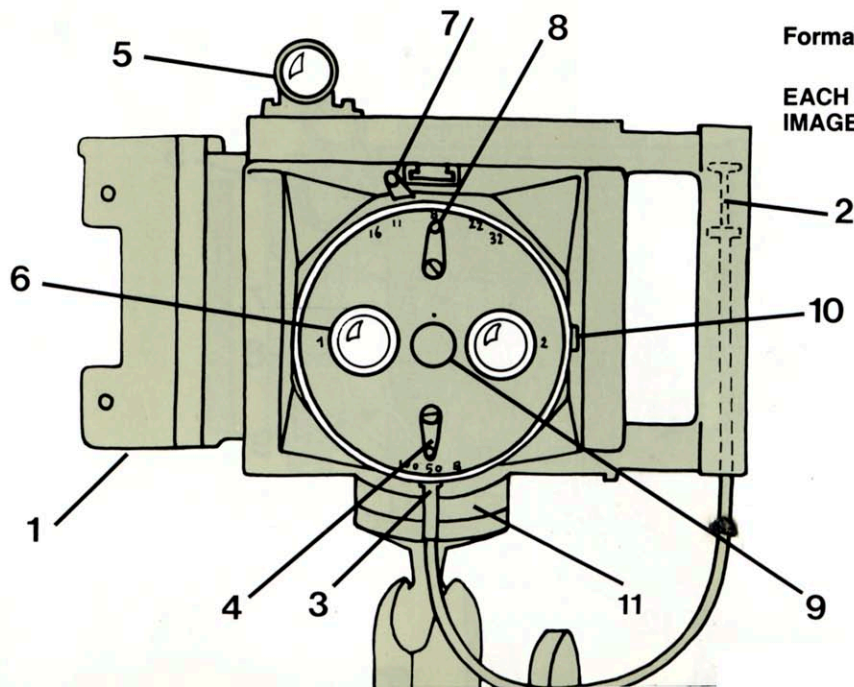
Focusing method: Measure distance.

- a. Focus is fixed on subject at distance of 1,12 m (38 in) from camera front.
- b. Ground glass focusing.

Film types used: Polaroid Series 50 4 x 5 Land film packets. Wet-process 4 x 5 films may also be used.

Format of each image: 88 x 56 mm.

EACH FILM PACKET PROVIDES 2 IMAGES.



Model 44

1. 4 x 5" camera back with ground glass focusing screen. Will take Polaroid 4 x 5" Land film holder or wet-process 4 x 5" film holders
2. Cable release, with locking screw
3. Cable release socket
4. Shutter control lever

5. Optical viewfinder
6. Four 125 mm f/8 lenses
7. Shutter cocking lever
8. Aperture control lever
9. Shutter sequence selector knob
10. Electronic flash contact
11. Tripod socket

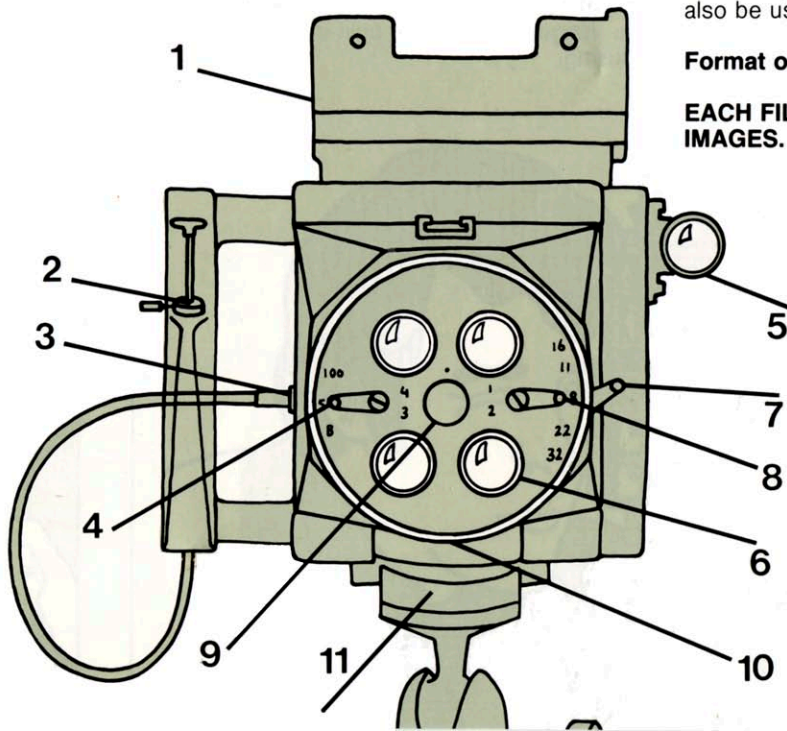
Focusing method: Measure distance.

- a. Focus is fixed on subject at distance of 0,96 m (38 in) from camera front.
- b. Ground glass focusing.

Film types used: Polaroid Series 50 4 x 5" Land film packets. Wet-process 4 x 5" films may also be used.

Format of each image: 44 x 56 mm.

EACH FILM PACKET PROVIDES 4 IMAGES.



Model 45

Focusing with camera Model 45

This camera can be focused, either by rangefinder or through the ground glass screen. Before you focus, position the camera between 1.20 and 4 m (4 and 12 ft.) from the subject. If, after focusing, you find that the image is too small or too large in the picture area, simply move the camera closer to or further away from the subject, and refocus.

The focusing mechanism: Loosen the focus locking knob (1). Focus the camera with the focusing knob (2). When the image is sharp, tighten the knob (1) again.

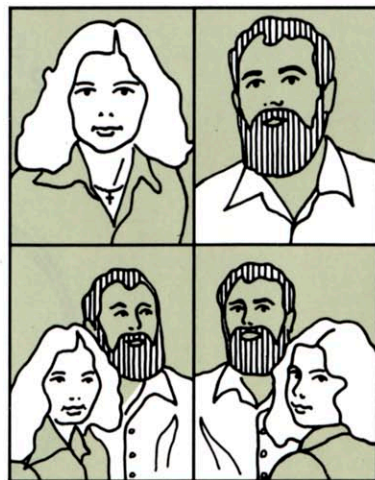
Image Control Model 45

Rangefinder control.

The rangefinder has a built-in split image focusing.

When you think the image has the right size, you focus with the focusing knob, until the split image is amalgated.

The rangefinder enables you to focus without removing the 4 x 5 filmholder from the camera. This gives you a quicker operation than controlling on the groundglass.



Camera location

The camera should be set up in an area which is specially set aside for its use. With very simple lighting, the space need be no larger than about 3 x 2 m (about 10 x 7 ft.). For the most efficient operation, it is important that the set-up remain undisturbed and that the camera and lighting are always ready for use.

Once the camera, the subject's chair and the lights are so positioned as to give you the lighting and exposure you want, they should not be moved. The correct position of each item can be marked on the floor, with masking tape or some other simple marking device.

Seat the subject

A seat should be provided for the subject. Avoid chairs with high backs, as these will tend to appear in the picture and thus create an ugly effect. A low backed chair is ideal, or a stool of a comfortable height will also do. The camera should be set at such a height that its centre is about level with, or just a little higher than, the eyes of the seated subject.

The operating distance

The focus position of the lenses is fixed. For optimum image sharpness, the distance from the front plate of the camera Models 40 and 20 to the eyes of the subject should be 1.20 m (48 in.). For the Models 25 and 44 this should be 1.12 m respectively 0.96 m. This is most easily measured with a small chain, cord or ribbon, one end of which is tied to the tripod and the other knotted at the correct distance. For measurement, the cord is held in a straight line toward the subject's face, and the camera is moved until the knot is level with the subject's eyes. Before measuring, be sure the subject is sitting as desired. After measurement, be sure there is no subject movement before you take the picture. See also DEPTH OF FIELD, on page 17.

Basic portrait lighting technique

There are four basic lights that make up complete portrait lighting. These are shown and described here. The function of each specific lamp is basically the same, no matter whether you are using electronic flash or tungsten lighting. For identification and miniature portrait photography, you can often make do with less than the full equipment described here. See the next page, and also the lighting set-up sketches on page 12.

(A) is the main light. It generally casts distinct shadows. It is positioned in such a way as to give the most pleasing and effective "modelling" to the face. Generally the best position is to one side of the camera, at approximately the angle shown, and pointing down at the subject's head at an angle of about 45 degrees from the horizontal.

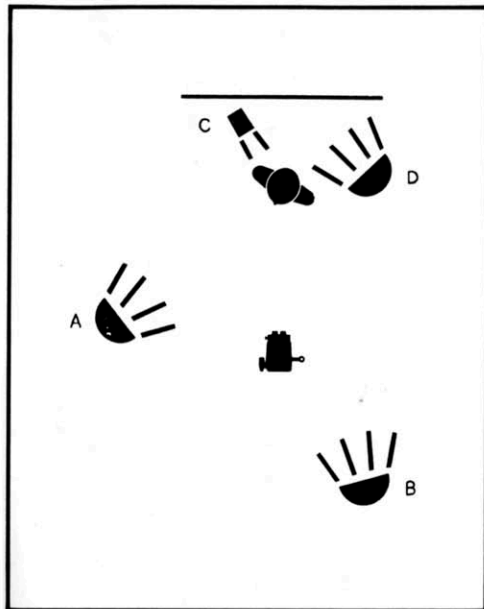
To soften the shadows and minimize lines and wrinkles in a face, the lamp reflector can have a diffuser placed over it.

An effective way of getting a diffused light with electronic flash is to use a reflecting umbrella (see page 14).

The main light should be no less than 2 m (6 to 7 ft.) from the subject.

(B) is the fill light. Its purpose is to fill the shadows cast by the main light. This lamp should give a diffused light, and it should generally be aimed at the subject from near the camera viewpoint. Its distance from the subject must be adjusted carefully. It should lighten the shadow areas sufficiently to permit these to be reproduced with some detail, but it should not be brought so close as to eliminate the shadows altogether. Under no circumstances must the fill light be permitted to cast shadows of its own. Use of a large reflecting umbrella with the main light can often render the fill light unnecessary.

(C) is the rim light. It is aimed at the subject from behind, and generally well above. Its purpose is to give a pleasing highlight to the hair, or a rim light to a shoulder. Ideally, it should be a small focusing spotlight. Care must be taken that it is not permitted to shine straight into the camera lens. It must also be placed carefully, so as to provide a highlight where needed but not at the same time give an unpleasant light patch to, for example, a forehead.



(D) is the background light. It is used to lighten the background to the desired extent. If the subject is a girl with long dark hair, for example, you may want a well illuminated background, so as to make the subject stand out against it. On the other hand, if the subject has long blond hair, you may want to use a comparatively dark background.

Generally, identification documents require photographs with a comparatively light background.

A brightly-lit background should not extend much beyond the actual area that will be included in the picture. Also, the background should not be unduly reflective.

Working with fewer lights: You do not need to use all the lights described here. For example, the fill light can frequently be effectively replaced by a white card or foil reflector, and sometimes even by a white wall. The reflector is placed so as to catch some of

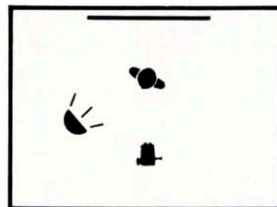
the light from the main light, and reflect it back into the shadows. The rim light will generally not be necessary in identification or miniature portrait photography, unless you are aiming for the utmost in lighting quality.

One main light, one reflector card, and a second light for the background are adequate equipment for most photography with the Passport camera. If space and equipment are really limited, excellent results can be obtained with just one electronic flash unit and a reflecting umbrella.

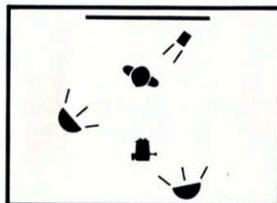
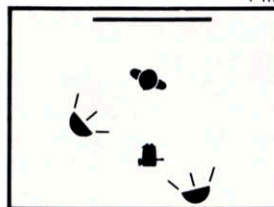
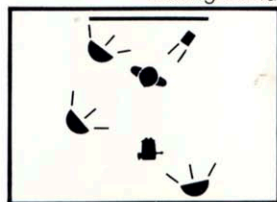
Reflections in eyeglasses: If your subject wears eyeglasses, watch carefully for unwanted reflections. Moving the lamp slightly and/or the position of the head will generally eliminate the problem.

The lens shades shown on page 23 are recommended for use on the Models 40 and 45 at all times.

How to "build up" portrait lighting



Main.

Main,
Fill.Main,
Fill,
Rim.Main,
Fill,
Rim,
Background.

The shutter sequence selector knob

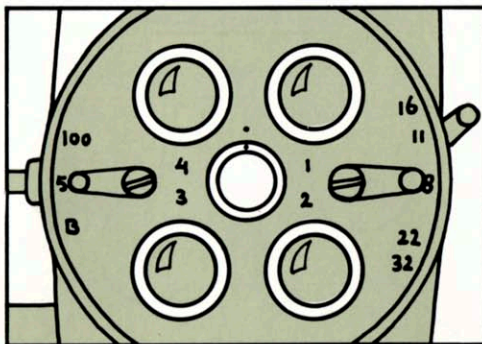
Camera Models 40-44-45: The knob in the centre of the camera front plate enables you to set the camera for shooting four identical pictures simultaneously or for making four separate shots, one after the other, on a single piece of film.



1. To take four pictures simultaneously, set the white dot on the knob opposite the white dot on the camera front plate. Depressing the shutter release once will give you four identical pictures on one piece of film. Develop the picture.

2. To take one picture at a time, set the white dot on the knob opposite the lens marked 1. Make an exposure and recock the shutter. **Do not develop the film yet.** Rotate the knob so that the white dot is opposite lens 2. Make an exposure and recock the shutter. Repeat the procedure, using lens 3, and then lens 4. After having made four separate exposures, develop.

The lower picture indicates clearly which image is made through which one of the camera lenses.



3. To make two separate pairs of identical pictures, first set the white dot on the knob opposite the white dot on the camera front plate. Cover the two top lenses with their lens caps. By making one exposure, you can now take a pair of identical pictures through the lower lenses. **Do not develop yet.** Move the two lens caps to the lower lenses. Recock the shutter, and make another exposure, to give you another identical pair of pictures. Develop.

Camera Model 20-25: The knob and the principle of its operation are as described above. With this camera you can make either one pair of identical pictures simultaneously, or two separate pictures, one after the other, on one piece of film.

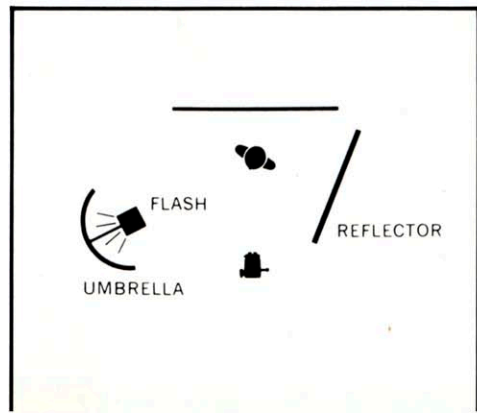
CAUTION: The knob will click into the right position for each lens setting. Always follow the click positions, and never set the white dot exactly opposite the numbers on the camera front plate.

Electronic flash illumination

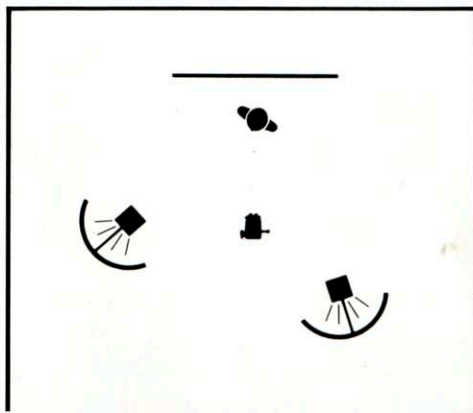
For colour pictures the use of electronic flash is recommended. Polacolor film is balanced for average daylight conditions (colour temperature approximately 5500 K). Almost all electronic flash units give a light with daylight colour characteristics. Thus, no filters need be used. The duration of electronic flash is short enough to stop virtually any subject or camera movement.

Electronic flash is also definitely recommended for use with Polaroid Type 105 Positive/Negative Land pack film, which has a speed of approximately 75 ASA equivalent (19 DIN) and Type 55 4 x 5 Land film, which has a speed of approximately 50 ASA equivalent (18 DIN).

Two lighting techniques: Two distinct electronic flash techniques can be used.



1. "Bounce" flash. This is achieved when the light from the lamp does not strike the subject directly, but is first reflected from a large diffusing surface. Lighting umbrellas are ideal for this purpose. Two simple and typical bounce flash set-ups are shown. The basic lighting principles described on page 10 apply. A rim light and a background light may be added, if desired. Bounce flash gives a soft light to the subject, minimizing lines and wrinkles and avoiding deep shadows. It also has the advantage of not needing absolutely exact positioning in order to achieve the precise lighting effect wanted. This also means that the subject can move more without spoiling the lighting effect—a feature which can be particularly valuable when photographing restless children.



2. Direct flash. The flash is aimed straight at the subject. This method is recommended when using less powerful flash units with colour film, where bouncing would severely cut the intensity of the light reaching the subject, thus causing underexposure. Follow the basic lighting principles described on page 10.

The shutter of the Passport camera is synchronized for electronic flash. Connect the flash synchronizing cord to the flash contact on the camera. The shutter can be set to 1/50 or 1/100 sec.

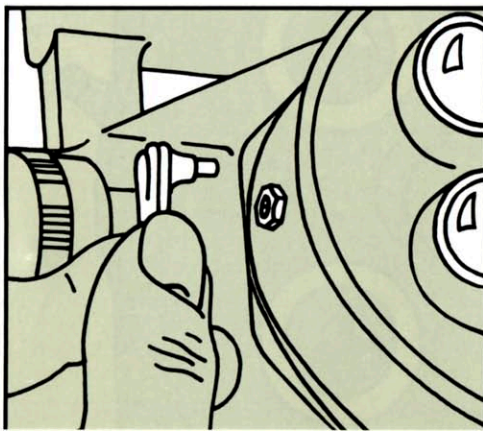
Set the lens f-number as indicated by the guide number of your electronic flash unit for the speed of the film you are using. The guide number will be in the instruction literature provided by the manufacturer of the flash unit. This guide number will generally refer to a direct flash. For bounce flash, open the lens aperture by 2 f-stops.

Make a test exposure. Correct the exposure, if necessary, as described on page 16.

Having found the right exposure, leave the camera, the subject's chair and the lights in their positions. So long as you continue to use this set-up, your exposures should remain satisfactory.

Neutral density filters: When you change from 75 speed film to 3000 speed film, you can compensate for the higher film speed by using appropriate neutral density filters over each of the camera lenses.

The Neutral Density Filter Kit will almost exactly compensate for the film speed change. Thus you can keep your camera setting and lamp distances virtually the same. If there should be a minor discrepancy, this can be easily corrected by slightly adjusting the lamp distances. See ACCESSORIES on page 22 and 23.



Tungsten illumination

If most of your work with the Passport camera is to be on 3000-speed (36 DIN) black and white film (or on Polaroid Type 52 or Type 57 Land film with the Model 45 camera), tungsten lighting will be adequate.

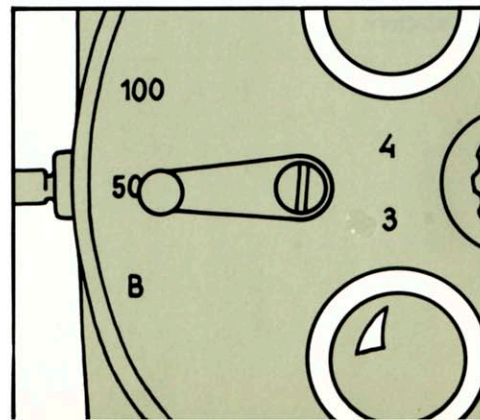
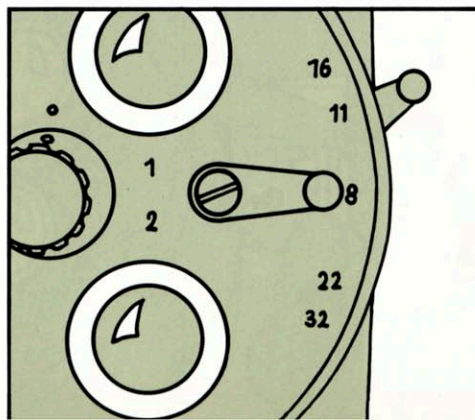
Use lamps intended especially for photography, such as photofloods or special studio floods, mounted in appropriate reflectors. Keep the lamps at least 2 m (6 or 7 ft.) from the subject, to avoid discomfort caused by both their heat and their light intensity.

Lighting technique: See BASIC PORTRAIT LIGHTING TECHNIQUE on page 10. As indicated there, in identification and miniature portrait photography you can generally achieve excellent results with less than the full lighting complement described.

Exposure control

Exposure: For initial exposure determination, it is best to use an exposure meter. Take a reading and then set the camera to one of the shutter speed and aperture combinations indicated by the meter. If the meter indicates a speed/aperture combination for which the camera cannot be set, then the subject is lit too brightly or too dimly. Bring the lights nearer to the subject or move them further away, until the subject brightness is such that the camera can be correctly set for it. Having repositioned the lights and taken another meter reading, set the shutter and aperture as required.

Once you have found the right exposure, leave the camera, the subject's chair and the lights in their positions. So long as you continue to use this set-up with the same film, your exposures should remain satisfactory.



Depth of field

The depth of field, or the distance zone within which the subject will be recorded with acceptable sharpness, increases as you close down the lens aperture. Thus, it is advisable to always use the smallest possible lens aperture (that is, the largest possible f-number).

The table shows the approximate distance zone, measured from the front of the camera, within which the subject will be recorded sharply at the various f-number settings.

Approximate depth of field

| | |
|------|--|
| f/8 | Negligible on either side of focused distance* |
| f/11 | 115-130 cm. (45-51 in.) |
| f/16 | 110-140 cm. (43-54 in.) |
| f/22 | 105-145 cm. (41-57 in.) |
| f/32 | 100-150 cm. (39-59 in.) |

*The focused distance is 1.20 m (48 in.)

How to take pictures

1. Seat the subject at approximately the correct distance from the camera. The camera and the subject's head should be at about the same height. Use a chair with a low back that will not intrude into the picture area, or use a stool.

Have the subject lean forward slightly with the forearms resting comfortably on the legs, or on the arm rests of the chair, if it has any. This posture is most flattering to the majority of subjects, eliminating apparent double chins and heavy necks. It is at the same time a position in which a subject can remain motionless for a longer period of time without discomfort.

2. Arrange your lights as you want them.

3. Set the shutter control lever and the aperture control lever for correct exposure.

4. Depress the shutter cocking lever.

5. Set the shutter sequence selector knob, as described on page 13.

6. Now set the camera-to-subject distance accurately (Models 40 and 20), or focus the image (Model 45), as page 8.

7. Carefully frame the head and shoulders in the bright-frame viewfinder.

8. Make the exposure by depressing the cable release mounted in the hand grip. (Remember to first remove the dark slide from the pack film holder.)

9. When you have recorded four images on one piece of film (two images in the case of the Model 20) you are ready to develop the picture. For development with the Model 45 camera, see the instruction book supplied with your Polaroid 4 x 5 Land film holder.

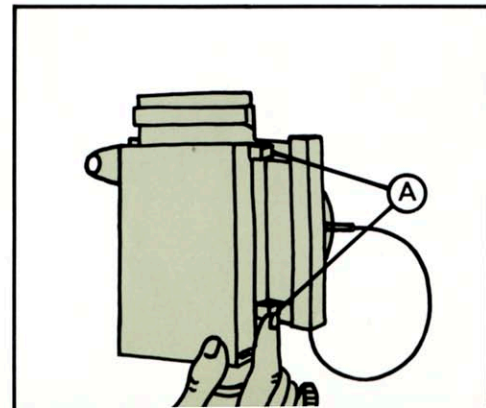
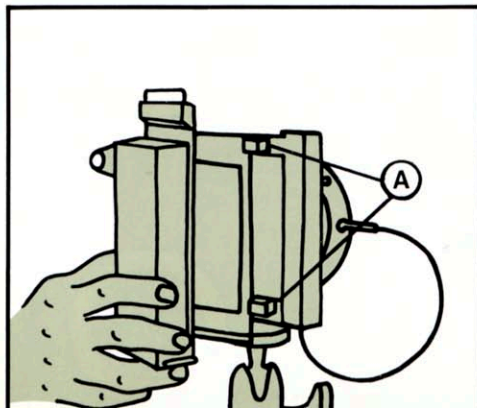
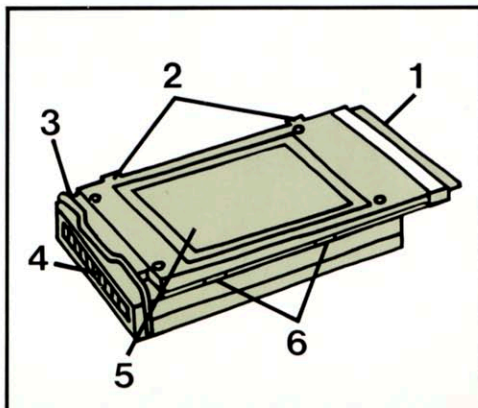
Holder

1. dark slide grip
2. mounting lips
3. door latch
4. film tab slot
5. dark slide
6. mounting aperture

Mounting the holder on the camera

Put the holder in the right position and fasten the holder at the camera by pushing the knobs (A) into the mounting apertures of the holder.

The two mounting lips on the holder fit into the two brackets at the camera.

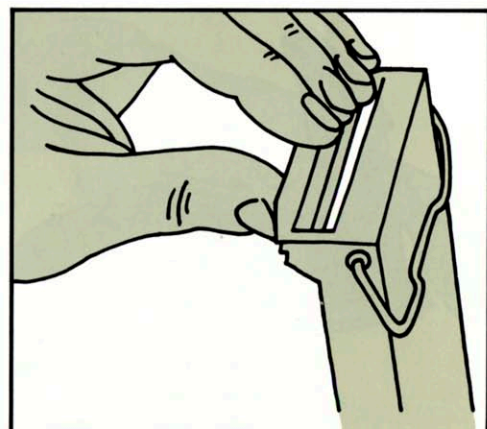
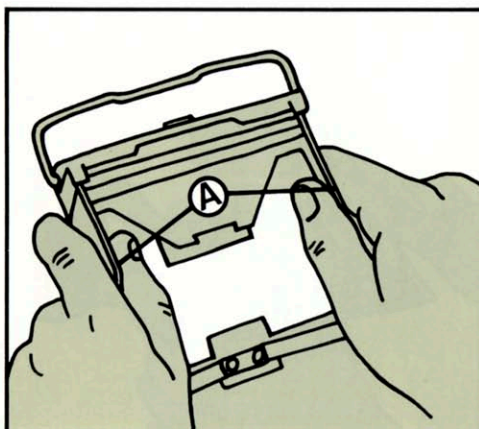
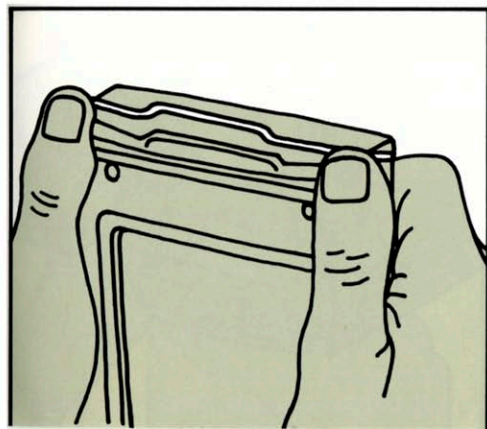


Loading

With both thumbs, snap open the door latch on the end of the holder, and gently open it. Note that the door does not open flat. Do not try to force it.

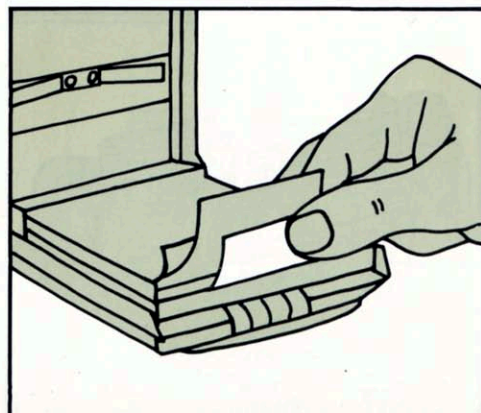
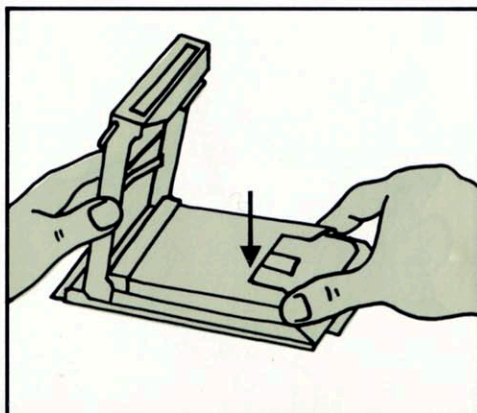
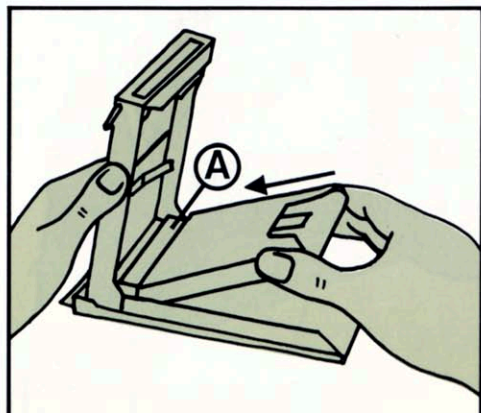
Before loading the pack film remove the steel roller assembly (A) for inspection. The unit will snap out of the holder if you apply a slight upward pull at the loops. **It is important to keep these rollers clean.**

Also inspect and clean the narrow slot on top of the holder where the yellow film tabs emerge. After cleaning, push the roller assembly back into position, until it locks firmly in place.



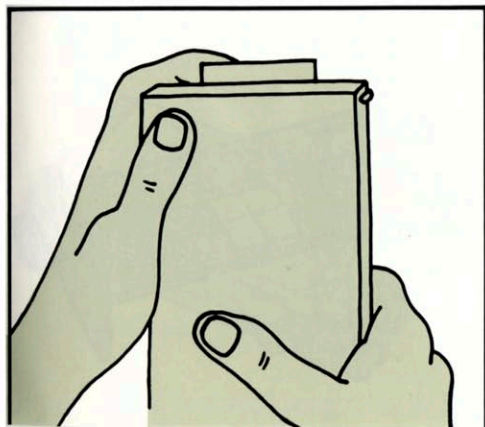
Loading

1. Hold the film pack so that the black paper safety cover faces the picture area.
2. Push the closed end of the pack into the recess (A) against spring tension, until it comes to a firm stop.
3. Push the pack gently into the holder. You will feel it snap into place.
4. Make sure all the white tabs are free, as shown, and are not trapped inside the holder, or under the film pack.

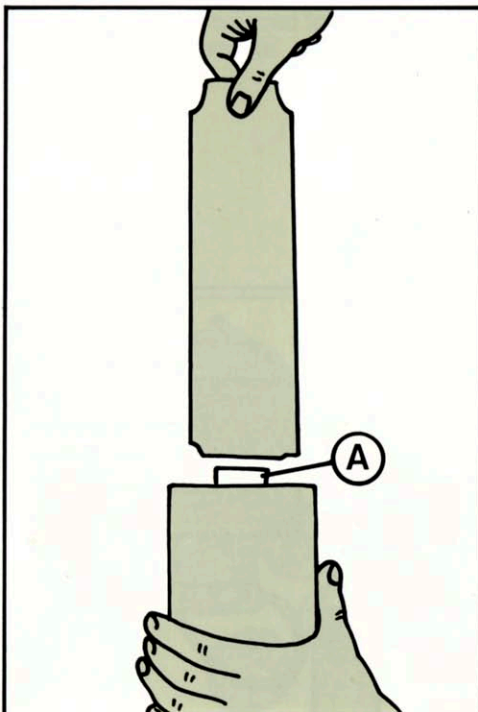


Loading

5. Close the holder and lock it. The spring latch will snap into place if you press it in the center.

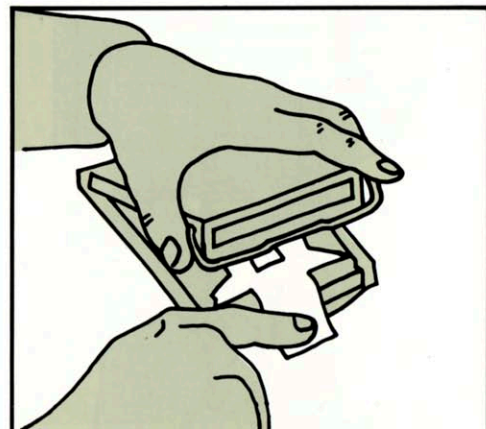


6. Grip the black tab firmly and pull it straight out. Pull it all the way—it must come completely out of the holder. When the safety cover has been pulled out, a white tab (A) should stick out of the small slot. Do not pull the white tab at this time.



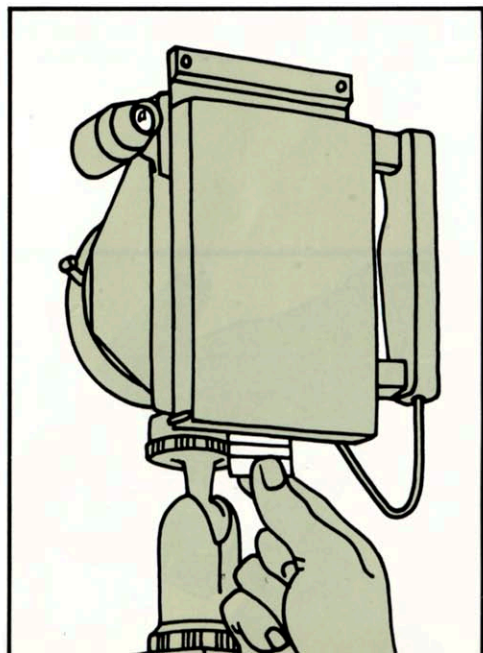
If no white tab is visible, remove the holder from the camera. Carefully open the holder in subdued light and, without disturbing or moving the pack, push the white tab into the opening. Close and latch the holder again. Check that the white tab is protruding from the slot.

IMPORTANT: The black paper tab of the safety cover must extend out of the front slot of the holder. If it does not, reopen the door and straighten the tab so that it does stick out.



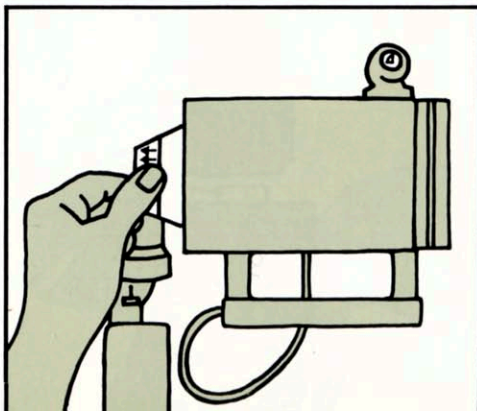
Guide to tab pulling

Model 40: The film tabs must be pulled straight downward from the camera. Adjust the tripod so there is ample clearance. If the tripod is sturdy, there will generally be no need to hold the camera while pulling the tabs. If you do wish to hold the camera while pulling, it is better to grip the upper part of the tripod, rather than the camera itself. Never use the viewfinder of the camera as a grip.



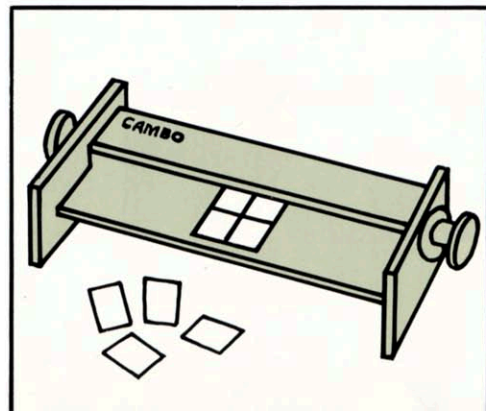
Model 25-44-45: Please see the instruction book supplied with the Polaroid 4 x 5 Land film holder.

Model 20: Firmly hold the camera or the tripod, as described above, while pulling the tabs out sideways.



Accessoires

Print Cutters will precisely trim the four and two pictures made with the Models 40 and 20.



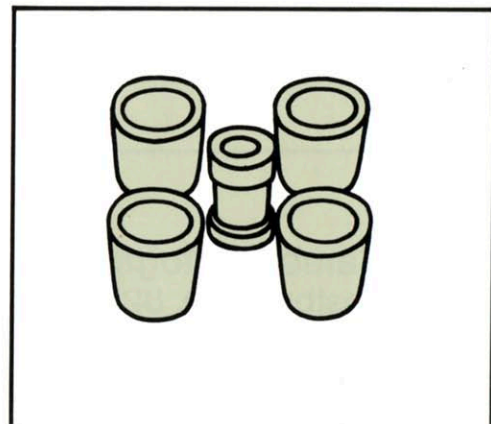
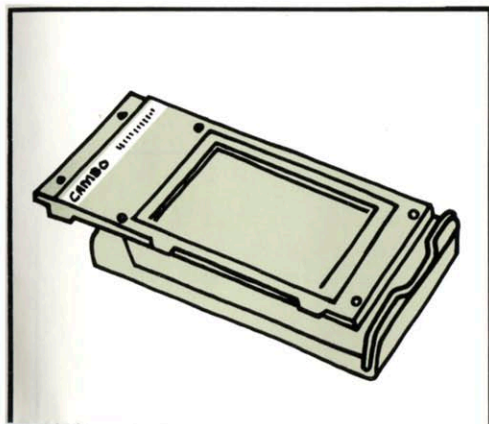
Accessoires

Pack Film Holder, provided with your Passportrait pack film camera, is also available as a separate accessory. With additional holders of this type, you can easily interchange films, from black and white to colour, for instance, without film wastage.

Neutral Density Filters will permit you to alternate between 75 speed and 3000 speed film without making major changes in the exposure or the lighting.

Supplementary Lenses reduce the image size of your Passportraits. They enable you to include more than one person in a single frame. Or, they can be used for other special composition requirements.

Lens Shades will enhance the quality of your portraits by reducing the effects of flare and uneven illumination. They are recommended for use on the Models 40 and 45. Included also is an extender for the lens selector knob.



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