

# How to Make & Use a Pinhole Camera

## Can or Box Pinhole Camera

Use a small, light-tight can or box as the camera body.

You can use any can that has a tight-fitting top. A 2-pound coffee can makes a good pinhole camera. You can use a clean paint can, a vegetable shortening can, a peanut can, or even a cylindrical oatmeal box. If the can you use has a plastic lid, you can paint the lid black.

Paint the inside of the camera body with dull black paint AFTER you have completed building all parts, or your film holder can cause reflections. You can also line your camera with black paper to prevent light reflections.



PINHOLE CAMERA MADE FROM COFFEE TIN



PINHOLE CAMERA MADE FROM SMALL CARDBOARD BOX

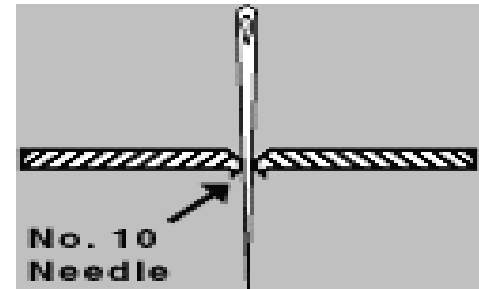
## The Pinhole

Make the pinhole in the end opposite the removable end. It's easier to attach the film to the removable end. You can make the pinhole in the box or the can itself, but it's much easier to make it in a separate piece of heavy black paper or thin metal. (We have Aluminum sheets for that.) Then fasten this piece over a larger hole cut in the center of the permanent end of the can or box.

For a camera with the pinhole 3 to 6 inches from the film, you'll get the best results if the pinhole is about 1/75 inch in diameter. You can make a hole this size by pushing a No. 10 sewing needle through the paper or metal to a point halfway up the needle shank. See illustration. You'll get a smoother hole if you rotate the needle as you push it through. If you're using aluminium foil or paper, sandwich it between two light-weight cards while you make the pinhole. This will help you make a smoother, rounder hole.

If you make the pinhole in a separate piece of paper or metal, you should now make a hole 1/4 inch or more in diameter in the center of one end of the camera body. Then tape your pinhole in position over the center of the hole.

You can check your pinhole to make sure it's perfectly round by looking through the back of the camera. To see if the image is clearly visible, aim the camera toward a printed page to determine if you can see the letters clearly.



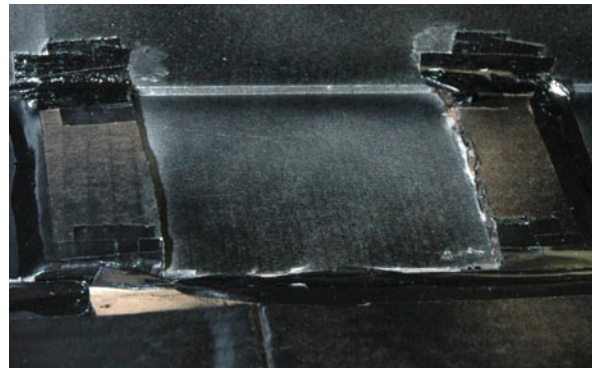
PINHOLE MADE IN ALUMINIUM PLATE AND TAPED TO BOX.

## The Paper Holder

On the inside of the camera, you will need some way to hold photo paper, so it will not move or fall while you are taking pictures. It is best to have this on the removable part of the Camera, as it is much easier to load there.

Four picture corners or two edges to slide the paper under are perfect.

Once you have the corners in place, make a sample sheet so you have a template when preparing photo paper in the dark-room.



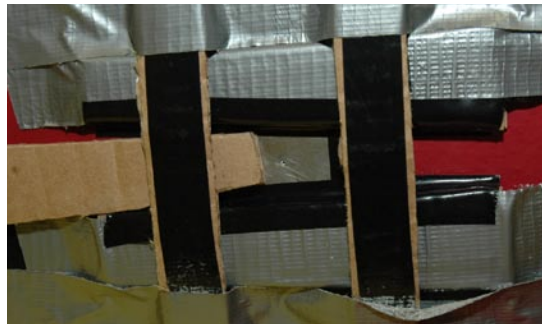
TWO STRIPS OF CARDBOARD (ONE ON EACH SIDE) WILL KEEP YOUR PHOTO PAPER FLAT.



IN SOME CASES, PHOTO CORNERS WORK BEST.

# The Shutter

The shutter for the camera can be a flap of opaque dark paper, or better a set of cardboard sliders that will stay closed securely while you aren't taking a picture. Make sure you can move this slider in and out without damaging the Camera.



1. CUT THREE STRIPS OF CARDBOARD
  2. TAPE / GLUE DOWN THE TWO OUTSIDE ONES
  3. PLACE TWO STRIPS ACCROSS TO HOLD THINGS DOWN
  4. CENTER PIECE SHOULD SLIDE FREELY BUT BE TIGHT.
- NOTE: MAKE SURE YOU DON'T COVER THE PINHOLE**

# Loading a Can or Box Pinhole Camera

You can load the camera either with film or fast photographic paper. Paper is easier to handle since you can load it into the camera under a safelight. Like the one in our Darkroom. Your choice of film or paper may depend in part on the exposure times. Paper, because it is less sensitive to light than film, will probably require an exposure of about 2 minutes for sunlit subjects. Film may require only 1 or 2 seconds for subjects in sunlight.

Make sure you have a stencil for the size you need, as you have to cut the photo paper to size inside the Darkroom. When you have the size of paper or film you need, slide it into the holder you created. The emulsion should face the pinhole. The emulsion side of photographic paper is the shiny side. Close the camera, making sure the shutter is closed.

# Exposure

To get clear, sharp pictures, you must keep your camera very still while the shutter is open. Use tape or a lump of modeling clay to hold your camera to a table, windowsill, chair, rock, or other firm support. Open your shutter to uncover the pinhole and keep the pinhole uncovered for the recommended time. Cover the pinhole between exposures.

The following table gives exposure recommendations for a can or box pinhole camera. These recommendations are approximate. It's a good idea to make three different exposures for each scene, as explained above, to be sure you'll get a good picture.

PHOTO PAPER	BRIGHT SUN	CLOUDY BRIGHT
Medium Size Pinhole Camera	2 minutes	8 minutes



THIS FLAT CAMERA USES A PLATFORM TO KEEP IT STANDING DURING EXPOSURE.



FOR ROUND CAMERAS, TRIANGLES WILL KEEP THEM FROM ROLLING.

# Camera Examples

