

## 720 Degree Image Bog roll camera. (2 x 360 degrees).

One of the most rewarding as well as bewildering approaches to pin-holing is imaging on the inside of a cylinder. This is an excellent teaching tool, forcing the user to mentally combust whilst getting a healthy understanding of aiming without a viewfinder. It is also a great use for the inside of a used toilet roll. For teaching and general experimentation, photographic paper works fine for all the methods below.



Pringles box (10 x 8), Poster tube (5 x 7) and toilet roll tube (5 x 4) cameras.

### **WARNING.**

The last time I taught this, the insides of toilet rolls were taken from all the conveniences of the University, making me highly unpopular with the cleaners!

### **Assembly.**

1. Get the inside of a toilet roll.
2. Flatten a sheet of aluminium cut out from a beer – coke can.
3. Cut out two circles of aluminium the same diameter as the roll, using it as a template.
4. Push a pin through the center of each of the circles of aluminium.
5. Sand down on both sides of the hole using 1200 grit emery paper, making the area of the hole as thin as possible. (This enables the hole to image at an acute angle, through a slot rather than a circular hole).
6. Check how thin the metal is by tilting the circle of metal up to a light and observing when the hole disappears.
7. Use black insulation tape to fix the pinholes onto each hole of the tube.
8. Cut the roll in half and adhere a strip of black card to form a light tight sleeve for the other half of the tube to slide into.
9. Make two shutters out of black insulation tape to cover each of the holes.

### **Use.**

The roll needs to be kept still which can be done with a rubber band and a short pen. Avoid sunlight entering either of the holes. Each shutter can be removed to expose either side alternately.

### **Aiming.**

Getting ones head around two 360-degree images back to back is great fun, making this one of the most enjoyable bouts of pre-visualisation chaos one can have! Try and position the roll close to a subject so no area is left blank (ie the sky). In the same way, if the roll is positioned on the ground, placing the camera on a newspaper will put detail into the foreground the camera is resting on. Initially 'pointing' the camera towards a wall (from a distance of about a foot), will give the user some vague idea as to what is happening. The area directly in front of the pinhole is

excluded from the picture, but with a circular 360 degree area either side of the hole being recorded. Due to the increasing pinhole – emulsion distance (inverse square law stuff) the image fades the further it is from the hole, so allowing the second image to form from the halfway point.

### **Exposure times.**

About 3 seconds each side in sunlight when using photographic paper, (semi matt reduces internal reflections.) The final photo can be rolled into a cylinder, (Image outwards), to show the two images joining up.

### **Advanced - Using film.**

If you fancy using film, the toilet roll has the same inside area as a sheet of 5x4. Make a smaller hole by pushing only the tip of the pin through the metal then follow the same procedure with the emery paper. This can also be used (for close ups) with a couple of flashguns to avoid camera shake. (see the self portrait on the main index page of the website). If you have a 10x8 enlarger lying around, as well as loads of spare cash, a Pringles box takes a sheet of 10x8 film.

A shiny cylinder, the same diameter as the roll used to create the image can be placed on the photograph and the image viewed in correct perspective off the reflection in the same way as in the 18th century bods used to do with paintings reflected in goblets. They didn't have toilet rolls though.

