



BSTV

http://bstvcentral.b0x.com

Instruction Set 2

This style of projector is more stable and slightly harder to make. Images of a finished prototype below. Sorry no pictures of this one in action just yet



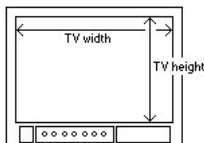
NOTE: To get the best picture you really need a "Fresnel lens".

Materials List

1. Thick Corrugated Cardboard (cardboard can be replaced with anything sturdy and not too heavy eg. thin fibreboard/wood paneling etc.)
2. Magnifying Glass (a Fresnel Lens is recommended)
3. Black paint
4. Duct Tape
5. Satiny knife or Sharp knife
6. Ruler
7. Pencil or Texta

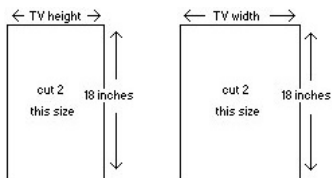
Step 1.

First measure the height and width of your TV screen. Make sure to measure just the screen and not the box around it.



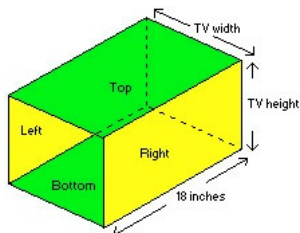
Step 2.

Then on the cardboard/wood etc. mark out your measurements for the screen height and width and set the depth to 18 inches. Cut 2 of each with your Stanley knife. (Where I have written "TV height" and "TV width" I am referring to screen size.)



Step 3.

You will then have 4 individual pieces that will form the sides of the cube, top, bottom, left and right. When we put it together it will look like this. I have coloured the diagram only to help you visualise the box better.



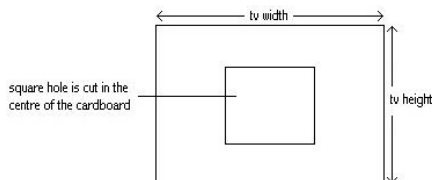
BSTV

<http://bstvcentral.b0x.com>

Instruction Set 2 - page 2

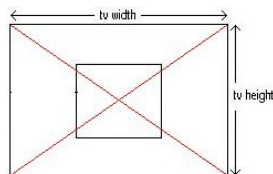
Step 4.

Now we will make the front of the box. The front of the box measures the height and width of you TV screen and fits on one end of the projector box you have just made. Mark and cut out the rectangular shape to the width and height measurements.

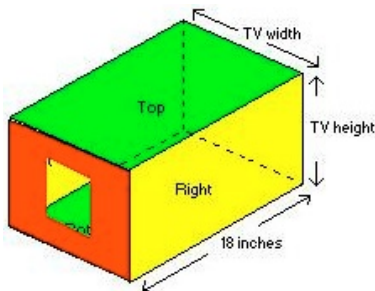


After you have marked and cut out the piece it is then time to centre a square hole. Draw two lines on the rectangle shape from corner to corner as shown below. This will give you a good guide to get the hole centred.

The mark and cut out the hole with a Stanley knife. The size of this square hole should be 12inches(height) x 12inches(width) for larger TV's and 7inches(height) x 7inches(width) for smaller TV's.

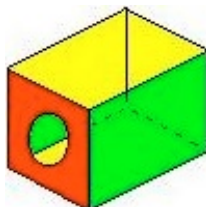


It will fit on the front of the first box we made like this.



Step 5.

Now we will make the focusing cube. It is another box just like the one you have just made, but smaller and the end of this box has a circle cut in the middle for the lens.



The height and width of this one will be 12inches(height) x 12inches(width) x 8inches(deep) for larger TV's and 7inches(height) x 7inches(width) x 8inches(deep) for smaller TV's. The hole in the front will be the size of your lens. See step 6 on how to correctly centre your lens. So cut 4 pieces 8 inches deep and 7 inches in width for smaller TV's or 8 inches deep and 12 inches in width for larger TV's. You will then have four pieces that make up the top, bottom left and right sides of the focussing cube. Now make the front part of the box that holds the lens by following step 6.

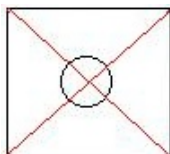
BSTV

<http://bstvcentral.b0x.com>

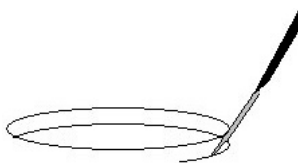
Instruction Set 2 - page 3

Step 6.

Start by marking out the measurements on the cardboard/wood with a ruler and then cut out the square shape. Create a straight line from one corner to the opposite corner to form a cross on the focusing cube, centre the magnifying lens with help from the cross. Now trace around the magnifying lens so that you have a drawn circle on the focusing cube and now cut out the circle. NOTE: The magnifying lens must fit snugly into the hole.



Note: If you are making this from cardboard, you can angle the Stanley knife when cutting the circle so that the hole in back side of the cardboard is slightly larger than the front. I have tried to demonstrate this in the picture below.

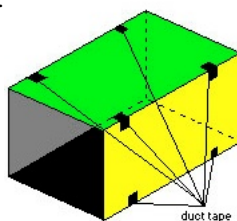


Step 7.

Take all pieces paint them black. Both sides if you wish, but painting the insides only is essential for a good picture. The Blacker the better. Make sure you use flat or matt black paint.

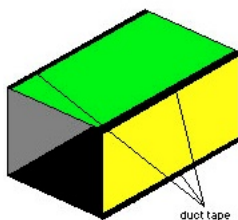
Step 8.

Once the pieces are dry, its time to stick them together. Using small pieces of duct tape, form the sides of the box (black on the inside) and stick the small pieces of duct tape on so it holds its shape. Repeat this step for both small and larger boxes. (Yes! There should be two of them).



Step 9.

Now that the boxes are held in place reinforce and close the gaps by running a strip of duct tape down each join.





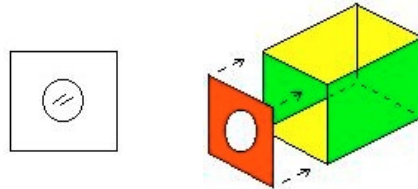
BSTV

<http://bstvcentral.b0x.com>

Instruction Set 2 - page 4

Step 10.

Now take the focusing cube front and insert the magnifying lens in it. Then attach this piece to the front of the focusing cube.



Step 11.

Turn your TV upside down. (It won't do any major damage, if you don't want to do this there is an alternative). With duct tape attach the box to the screen of your TV making sure to close any gaps so that no light will escape. Then insert the focusing cube inside the box. You are now ready to use your projector.

Step 12.

Sometimes it is difficult to predict what the best position for the TV and focusing cube should be to get a picture. I always start by lining up the outside end of the box about 2 inches from the wall, the picture is very small but at least you know its working. Then slowly move the TV and projector away from the wall until the desired screen size is achieved. Then use the focusing cube to focus the image. It will take a little fiddling around with but you'll get it.

Don't want to turn your TV upside down? Here are the alternatives.

The first alternative is to put your TV on its back with the projector on facing the ceiling. This will then project the image into the ceiling. You could lay back and watch the movie on the ceiling or place a mirror at a 45 degree angle at the end of the projector. The image will then be projected onto the mirror and bounce off onto the wall reversing the image top to bottom.

The only other alternative is to watch the screen upside down. Adding another magnifying lens will not turn the image around the right way.



BSTV

<http://bstvcentral.b0x.com>