

## Angel (Demon) Eyes

*CougarDB.com*

By: Phant0mzero

Note: Please read this all the way through before starting this project.

Tools: 1. Soldering Iron

2. 60/40 Solder w/rosin core

3. Heat Gun

4. Rotary Tool (Dremel, Craftsman, etc.)w/ cutting wheel and drill bit

5. Eye Protection

6. Some sort of face protection

7. Coke (pepsi, or what ever you drink) can

8. Two Needle Nose Pliers

9. Wire cutters and strippers

Things To Buy:

1. (4) 5mm LED's (I use Linrose Super Bright White LED's, but you can find LED's at RadioShack) about \$5.00 a piece

2. (2) 220 ohm resistors (5 pack available at Radioshack for under a dollar

3. 22gauge wire

4. Clear Replacement Wand for mini-blinds found at many hardware and home improvement stores

5. Wire taps for 22gauge wire.

Instructions:

O.K. well you've decided to add Angel (demon) eyes, otherwise known as Halo's. Lets get started. First thing's first, make sure you have the tools and the supplies needed if you plan to do this in a day. Once that step is completed you can get started.

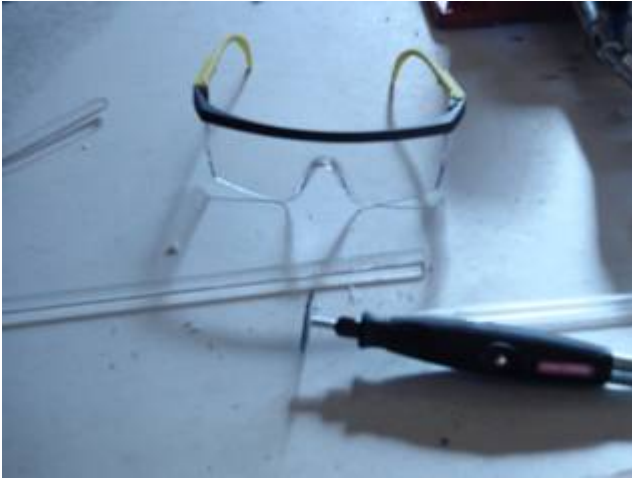
Step1: Creating The Eyes

A. Take the Replacement wand you purchased and take off the tip with the hook used to connect it to the mini blind. Once this is done, move on to step B.

B. Cut the wand in half, That's right, just in half for now.

C. Now that the wand is cut into portions, you'll want to make scratches into one side of the portion, not very deep, just a bit deeper than the surface. This is done with the cutting wheel on the rotary tool. When doing this, you want to do it evenly. I did mine by site, and they look good. Each scratch should not have very much space between it. About a sixteenth of an inch for those measuring. For this part of the process I highly recommend

eye and face protection if using a rotary tool. The plastic is flung at high speeds and could cause injury. On both sides leave a little room, about a quarter of an inch or so.



D. Repeat for other section of the wand.

E. Next comes bending of the wand.

- a. Drink a can of your favorite soft drink, peps, root beer, coca cola.
- b. Find something to secure the now empty can, I used a small vice.(I wouldn't recommend a hand, as the can heats up.)



- c. Now with the wand you scratched in hand, place the wand with the scratched side down by the can, as pictured above. Now with needle nose pliers grip one end.
- d. Take the heat gun and start heating by where you grabbed the tip with the pliers. And start bending the wand around the can slowly. During this process it helps to have another person to hold the heatgun and heat the appropriate place.

As you bend the wand, make sure the scratches stay flat down, if they don't, its ok, you'll just have to make some more scratches with the rotary tool. Take your time when bending the wand around the can, but watch how hot the wand gets because it will start boiling if it gets too hot. You'll have some excess, which is fine for now, just overlap them. (If you don't have a heat gun, you can use a small oven, but watch the ring carefully, and make sure it is only heated to the point of being flexible. I did not do it this way so be cautious.

e. Repeat step d. for the second section of wand.

f. Now that you have bent the rings they should look like this.



g. Now trim the excess off. Leaving only a small amount of space in between the two tips.

h. Now slip the rings back over the can to and re-grip the two ends of a ring with needle nose pliers and start heating the ring so that it starts laying flat. Once the ring is completely flat, hold it there so that it cools and keeps its form. Repeat this process to the other ring.

i. Now you have two rings. With the drill bit, drill into the ends of the ring, When doing this be careful not to melt the tips because of the high speed it is very easy to melt the plastic. Wear eye and face protection here too. When drilling, stop frequently to see if the LED fits inside the hole, only drill to the point where the LED does fit inside the hole. Before putting the LED in, make sure the hole has cooled. Repeat for the other ring on both tips.

F. Ok, now to wire the LED's

a. gather everything, solder, soldering iron, two LED's, resistor, and some 1 foot long lengths of wire, I used 22 gauge.

b. On the two LED's each has a positive, and negative, the longer of the two contacts is the positive.

c. To wire the LED's correctly, you'll have to put the resistor on one positive, then on the negative, of that same LED connect the positive of your second LED. So, it'll look like this when you connect everything. Resistor(+)-LED(-)-(+)-LED(-)

d. Connect wire to the two ends and make sure your LED's light up. Easily done by connecting them to a 9volt battery.

e. Solder everything for a good connection. If you don't know how to solder, take

the time to learn on some extra wire. There is a cold solder out there, but I haven't used it yet, I saw it at Radio Shack. You may want to try that if you're afraid of soldering.

f. Ok, now that you've connected everything and seen that it has lit up its time to fit the LED's into the angel eyes, bend the prongs, and trim the excess.

g. Repeat for the other halo

h. Oh yeah, take your time and make sure everything is right.

#### G. Now its time to take apart your headlights.

a. follow said7's how-to for taking the headlights apart at the team-neco website.

<http://www.cougardb.com/info/howto>

b. make sure to take this process slow so that you don't crack the housings. Helps to use a heat gun.

#### H. Installing angel eyes.

a. now that your headlights are apart, the part that said7 used to paint is the part you will use to install the angel eyes. First start by taking out the little cowl or hood, or what ever its called off. On the bright's pod. It may have prongs that have been bent around to keep them in, or just simple tabs. I had both on my headlights (Ford engineering at its best.)

b. Now with your rotary tool take off the middle hole used to keep the cowl thing in out, be careful when doing this because if you use too much force you may damage the housing, remember, you just want to take out the top part of the hole so that it makes it easier to run the wire.

c. Now place the angel eye into the pod, make sure you put it in with the etched sides against the surface of the pods. To make it stay I used a combination of small dabs of superglue and a small pin melted slightly through one of the holes to the ring, that was used by the existing tabs from the cowl. Once the pin was melted in I bent the pin around tightly and it didn't let the angel eye to move, nor was it able to be seen.

d. Now start putting the housing back together, when doing this run the wires through the housing to the back through the hole used by the headlights, to replace the bulbs.

e. Seal your headlight, take your time again and make sure its done right.

#### I. Installing the headlights in the car.

a. put the headlights back into the car, easy huh?

b. Now with the wires, I connected mind to the corner light, it has one orange and one black wire running to it. With your wire taps, connect the positive of your wires from your angel eyes to the orange wire, and the negative to the black. Now, except for testing, you're done.

c. Turn on your headlights and you should have angel eyes.

Note to reader!!

Take your time with this project! Make sure you have all of your supplies before you begin so that you're not trying to run around town finding parts.

Thanks to all the members that helped in the original post and the original howto for the crx, found here

<http://students.washington.edu/ashis/Creating%20Custom%20Angel%20Eyes.htm>