

## Winter Headlight Project Rich Velardo

Arrggghhhhhh.... It's HOW FAR BELOW ZERO??? Looks like the ol' Miata isn't going far for a while and I NEED a project. I've wanted to redo the headlights for some time now, I want to try some round "angel-eye LEDs around the headlight rather than the strip lights that were in there.

I found a set of 80mm diameter angel-eye LEDs for a total of \$40.59 shipped to my door in two days. I love the internet. After some modifications, these will fit the light shroud that fits in the headlight assembly. I also plan to paint the shroud black while I'm in there modifying things.

Of course you have to start by taking things apart, we all love to take things apart, but be careful to remember how it all came apart, 'cause we're going to have to put it all back again.

Note; This project will work on NBs and NCs, with the plastic exposed headlights. The headlight assemblies are made in two parts, the "bucket" and the lens that are held together with screws and some sort of goo. You guys with NAs and their barn door headlights won't be doing this.

Taking it apart;

- 1) Remove the bumper cover. Lots of screws & plastic push pins. Do not lose any.
- 2) Four bolts and one plastic push-pin hold the headlight assembly in, remove them and pull out the headlight.
- 3) Disconnect the wires, careful with the lights bulbs. If you touch a bulb or it gets dirty, use alcohol to clean it before you reassemble.
- 4) Strip the headlight assembly of light bulbs, rubber seals, screws and wires.

The headlight assembly;

- 1) Confiscate Mama's baking oven, no worries you won't hurt it and if, by chance, she's not around to see you do this, she'll never know. Bake the headlamp assemblies at 200-210F for 15-20 minutes, to soften the goo that seals them and then just pull them open. DO NOT get the hot sticky goo on you or anything that you don't want to be permanently goo'd. Also do not let the plastic lens touch the hot burner.
- 2) Let it all cool so the goo stays put, on the headlight assembly, then remove the inner light shroud, measure & mark what needs to be cut off so the LED ring can be glued in place. I cut the shroud at the indents, leaving a tab sticking out at each indent to help hold the LED ring.
- 3) Once the shroud is cut and the LEDs will fit properly, the inner shroud can be painted. You can paint it any color you choose, I even considered painting it copper red to match the body but went with matte black. Be sure to clean, prime and then paint carefully.
- 4) Clean the paint from the gluing surfaces, glue the LED ring on and run the wire. I used hot glue, I've found that it does a good job on dissimilar plastics and I built it up a welding like bead on the back-side of the LED ring. The wire ran out the bottom and it too was hot-glued in place.
- 5) Reassemble the light assembly, don't forget the screws for the inner parts first, then heat in the oven as before and push the parts back together. Put the screws back in and you're done.
- 6) Drill a small hole for the wires to run out, run the wire and seal the hole around it. Hot glue or silicone will do the job.
- 7) Reinstall the light assembly in the car. When you removed the bumper cover you carefully put aside the fasteners. Now go find them if you can, reinstall the headlights being sure the wires are neat and not rubbing where they'll cause a short. Run the wires for your LEDs to a power source, mine are wired to a bus bar in the fuse box that goes hot when the ignition is on so they are DRLs.
- 8) Finish reinstalling your Bumper cover, step back and admire your work.



Baking the light assembly, it fits!



Gooley, yuck.



The LEDs & shroud. Cut down to the indents on the shroud to leave tabs.



The moment of no-return. Cut the inner shroud off so the LEDs can be glued on. Leave the "tabs" for extra support for the LEDs.

Once cut the shrouds can be cleaned, primed and painted any color you wish.

After painting clean the paint from whatever surfaces will have glue on them, double check the fit and glue the angel-eye LED ring in place, glue down the wire leads too.

There, you go, looking good and ready to be put back together.

Back to the car, reinstall the lights, then the bumper cover and the inner fender liners.

Here's the result, those are very bright, much brighter than the LED strips that were in there previously.

