

## 1) Ingredients:

- a) (2) E55 projectors
- b) (2) Hella ballast (reportedly Denso ballasts characteristics do \*not\* trigger bulb malfunction warning)
- c) D2S 81522 Phillips bulbs
- d) 20 lock washers, serrated design
- e) 1 tube Permatex RTV silicone, clear
- f) 1 tube Permatex windshield silicone, clear (little more viscous than above)
- g) 4 crimp on, in-line connectors, female bullet socket
- h) 4 bullet, male connectors (to fit above)
- i) Depo/Taiwan clear lens headlight units (**do not** use Eagle Eye or other offshore brand)
- j) Helpful tools:
  - i) VOM (analog or digital, no matter)
  - ii) Hemostats
  - iii) Needle nose pliers
  - iv) Assorted Phillips and flat bladed screwdrivers
  - v) Strong, even lighting above project bench
  - vi) Blue masking tape to help label parts
  - vii) Empty egg carton bottoms to help sort small parts
  - viii) Dremel or other hand held rotary shaping tool (plus several sanding drums)
  - ix) can of pressurized air to puff debris off chromed reflector (don't rub !!! silver surface scratches easily) be careful of leaving prints – clean off prior to sealing up
  - x) bone up on retrofit at [HIDPLANET.COM](http://HIDPLANET.COM)'s "HID University" forum ←- highly recommended !!

## Procedure (from memory):

### 1) Disassembly

- a) Open back of Depo and remove all bulbs, hose. Sort/label parts carefully!
- b) Heat convection oven to 200-250°F. Turn off. We're trying to soften sealant, not bake the headlight.
- c) Place Depo on cardboard, on cookie sheet and slide into oven for 10 mins
  - i) test to separate outer lens. If not easily removable, return housing to oven and heat another 2-3 mins.
- d) Remove and use wide, flat blade screwdriver to pry off clear, front lens.
- e) Remove Depo projector, separating from bezel.

### 2) Fitting

- a) Position E55 projector inside rear of Depo unit and note mounting points.

Determine if Dremeling of projector opening is needed to clear bixenon solenoid. Relieve plastic if needed. Aesthetics not compromised as chromed plastic reflector shields the cut-away area. Shroud further hides any Dremel work. Be careful not to bend pivoting shield unless you are sure you want to alter cutoff and/or color.
- b) Use lock washers to expand mounting points and to secure E55 projector to existing Depo mounting posts. NOTE: the top posts are taller than the lower posts and if left unaltered, may point the beam upwards. If needed, Dremel and notch the top post to create a shelf to aid in positioning E55 flange on reflector. (**see diagram below**)

- c) With E55 secured, apply 12vdc to bix leads to test and verify shield operation.
- d) Reuse Depo shroud. Projector lens on E55 same as Depo, ie 90mm, so should fit perfectly. Apply dabs of hitemp silicone on shroud tabs if needed before assembling to projector.

### 3) Resealing outer lens

- a) Reheat headlight housing and clear, outer lens in oven to soften gray adhesive.
- b) Carefully fit clear lens to headlight and hold together firmly for a couple of minutes. (I placed the whole unit lens down on mattress and put some body weight on it which I thought would be more even pressured.
- c) Apply bead of windshield silicone sealant to perimeter of outer lens....at juncture where clear lens meets housing. The windshield sealant is more viscous and seeps deeper into the crevices.
- d) After bead dries, follow up and reapply using thicker, RTV silicone sealant. Bead doesn't need to be pretty. The figure 8, rubber gasket will hide it very well.

### 4) Continuing with assembly ....

- a) Reattach hoses, wiring, bulbs.
- b) Crimp on solderless, in-line connector to high beam lead. When high beam activated, tapped power will be used to trigger bix shield solenoid.)
- c) Dremel circular hole along edge of rear opening of headlight assembly. Ballast high tension lead will exit housing here. Surround with rubber donut/gasket. I used 1/2" OD, 3/8" ID. Run solenoid leads through grommet next to high tension lead. Carefully close rear hatch.
- d) Identify secure mounting point on headlight assembly for Hella ballast.
- e) Carefully fit headlight unit to vehicle. Reconnect LOW and HIGH beam connectors. Test before reconnecting body hardware, ensuring proper light activation as well as bixenon shield function.
- f) Adjust for HORZ and VERT aim. If cutoff is angled and not parallel to the ground, the mounting system should have just enough slack to allow for rotational adjustment 0-5° or so. Simply loosen the 4 screws at the mounting posts and carefully rotate the E55 projector as needed.

Here are some Q&A from other folks.....

**Question:** do I need a supplemental wiring harness to fit the HID Depo into my E320?

**Answer:** I asked Huy specifically about this last Spring and he responded

*" If you're running w/ good ballast (Hella, Philips..), then you can run it straight out of existing wire, just upgrade fuse to 15A for both left and right headlight (on the left panel of dash, open up driver door, you'll see them). If you're using aftermarket ballast & bulb, then yep, you need to run relay."*

here's why: HID was an option and guess what? they use the same wiring, but they add misc bits for the auto leveler. supplemental harness is recommended especially for those who mod their cars which didn't come with HID from the factory at all. ....but they want that HID lighting. so, play it safe and build one, people recommend at HIDPlanet.com

i simply tossed in INLINE fuses to be the weak link should amperage rise above normal. it hasn't. so i'm doing fine.

let me know if you need tips on your project. it has got to be one of the **easiest HID retrofits of nearly all automobiles**. the DEPO shell is large and has lots of room to work with. the E55 projector is nearly a perfect drop in into the existing DEPO halogen projector mount. If you go and read up on HID retrofits at [HIDPLANET.COM](http://HIDPLANET.COM), you'll see other projects which have MUCH higher degree of difficulty.

**Question:** How does the E55 projector mount inside the Depo?

**Answer:** At this point, you should have most of the rubber innards and metal work removed, the proj and bulbs removed, and the exterior, large clear Depo lens removed (via heat....pref oven).....right? if not, let me know what you've done and where you're at in the dismantling of the Depo lens.

presuming you've gutted the Depo and have the H7 halogen projector unit removed from the plastic housing.....

pick up the E55 proj and insert it into the rear of the Depo housing.....and just to size things up, hold it approx in place of where the H7 proj bowl used to be

1 - the mounting flange of the E55 proj should touch each of the 4 plastic Depo mounting posts

2 - the metal flange should be too small to be used via any of the pre-existing mounting holes already on the metal flange

3 - if you move the E55 proj just right, you should be able to see that the plastic mounting posts (and holes) just barely peek over the edges of the metal flange, right?

4 - what we're going to do is to use serrated metal lock washers to pinch the projector against the plastic mount post. the outside diameter (OD) will be large as possible, yet the ID will be small enough so that they don't slip out of the mounting screw. we will reuse the same Depo screws that were used for the H7 proj.

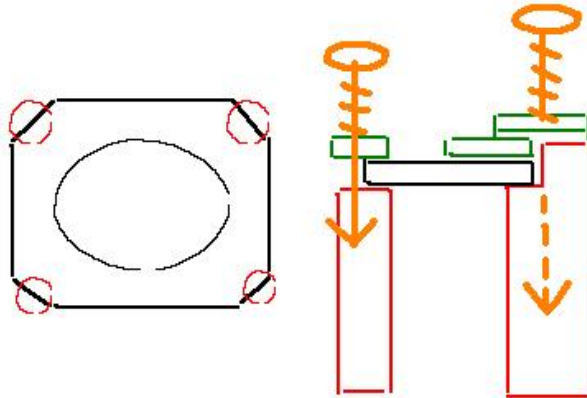
so if pictured from the side...in layers, the bottom will be the plastic mount post. above that will be the E55 metal flange. above that will be a serrated lock washer. then, securing all this to the mounting post will be the Depo screw. The screw pinches the oversize lock washer against the plastic mount post. the serrated design of the lock washer helps to keep the projector from shifting.

still with me so far? that was just a trial run to give you an idea how it is to be assembled. there are still a couple of other details you need to be aware of:

- you may find that the cylinder body of the solenoid which controls the cutoff shutter will not fit comfortably within the large 4" opening of the Depo shell. as you maneuver the E55 proj around, it will hang up and catch on the 4" opening. BFD....we'll just notch or cut away some of that 4" opening with a Dremel sanding drum. you're going to cut, trial/error, just enough so that it comfortably clear the solenoid. no need for concern here because this cutout will be covered by the projector shroud/bezel. remember the pretty chrome oblong ring which surrounded the front of the Depo proj ?? hope to heck you didn't break any of the plastic flanges during removal. this shroud/bezel will fit perfectly on your E55 proj.

- also, when viewed from the side, the 4 plastic mount ing posts are of 2 diff lengths. if you simply reuse the posts unaltered, the projector will be tilted. we will shave a notch into 1/2 of the TOP mount posts, deep enough so that they bring the proj more to the level. i'm guessing this to be approx 1/8" or so. this can also be a trial/error thing and we'll use the end of a Dremel drum shaped sanding stone (not cutoff wheel).

dinking around during dinner on the laptop....



the image on the left is overhead view of the E55 bowl positioned right over the Depo posts. my experience was that the metal flange (black) comes just shy of the centerline of the screw holes (red)

the image on the right is a side view.

**orange** - screw  
**green** - serrated washers  
**black** - projector flange  
**red** - mounting posts

basically, we cheat and use the washers as spacers as well as pinchers to help secure the E55 projector to the mounting posts. Zam says this is quite secure, but I was apprehensive. so i cut a serrated washer in half (half moon) and also placed one beneath the flange, so that there was washer above and below, both pinching the flange when the screw was tightened. I also used very small dab of blue locktite on screw thread. nothing permanent...may require adjustment.

surprisingly, the mismatch of the metal flange vs the posts also allow the projector to be rotated if needed, and to ensure that the cutoff is parallel to the ground. there is just enough slop to allow rotate a few degrees.

the post on the right should be the top post. it is a scootch longer than the lower post when viewing from the rear of the headlight assembly. that little "L" shape notch is what I shaved to create a shelf for the flange to sit on. i shaved down this shelf so that it was level with the other post.

dunno if this helps clarify. if you see another easier, more secure or better design, let me know. I just did what Zam suggested and didn't possess enough creativity to do otherwise.

**Question:** how do you get the chrome plastic piece off the gray housing? I'm assuming it's those two wing nut looking plastic pieces, but I'm not familiar with those types of fittings???

And any idea what size serrated (is this the same as a lock washer?) washers do I need to pick up?

**Answer:** if you're referring to the big, chrome inner shell which covers most of the inside gray area, I dont think removing it is crucial. you're not modifying anything connected with that piece.

if anything, the challenge is to **KEEP YOUR FINGERPRINTS OFF IT !**

also, before you seal things up at the end, to carefully study it so that **THERE ARENT ANY FINGERPRINTS ON IT!** 😊

i recall that there were kind of plastic bayonet type fittings in a couple of places, possibly securing it with some gray adhesive/sealant. they were just shy of a 25¢ piece. possible similar to the gray goop sealing the large outer clear lens.

If you find yourself having to Dremel clearance for the solenoid, the plastic dust will cover much in the housing, so perhaps it may be a good idea to remove that large inner silver portion. but i didn't think it was crucial.

i used spray can of air to puff things off. oh, the silver reflector surfaces **SCRATCH EASILY**. so be careful.

above your operating table have good, strong lighting, from as many diff directions as possible. go slow. and second guess every single step. blah blah, measure twice, cut once. (!)

serrated lock washers: i had saved up bits and pieces over the years and just dug inside a coffee can and pulled out whatever would fit. this was the one which did the job: OD was large enough to overlap the metal flange of the proj sufficiently and securely. the ID was large enough for the screw to pass through but not large enough for the screw head to slip through. no brainer, eh? if you want bigger OD to overlap the proj flange, stack a larger washer beneath the smaller one.



you may/not have read how long i delayed starting this project. good lord, i was taking a new, \$350 headlight housing, going to cut it up and secure HID guts (another \$350 or so) to it, and connect high voltage ballasts and make this work right....the first time. I bought all the parts and it sat for months before I got my nerve up. Looking back now, I just laugh. I drew diagrams and typed up rough procedures of how I was going to proceed.

so....anything I can do to help alleviate your apprehensions or questions, i'm happy to. this isn't a competition so just go slow, intersperse with lots of "hmmmmm" and try to conjure up answer first. then, kinda like the Mars probe/robot, you do dry runs and rehearsals before cutting or gluing. 🤖

**Question:** Does the 15amp inline fuse go between the ballast and Depo plug; or inline on the hot wire leading to the harness plug on the Depo shell?

**Answer:** I put in on the intake side...the small wires leading from the car harness, into the ballast.

**Question:** Where did you mount your ballast?

**Answer:** my pre-face lift had body recess below the headlight housing, once mounted. so i put the ballasts there and secured down there so it wont move around. i put it inside a plastic type housing to guard against serious moisture...yet kept it somewhat free for cooling.

**AFTERTHOUGHTS:**