

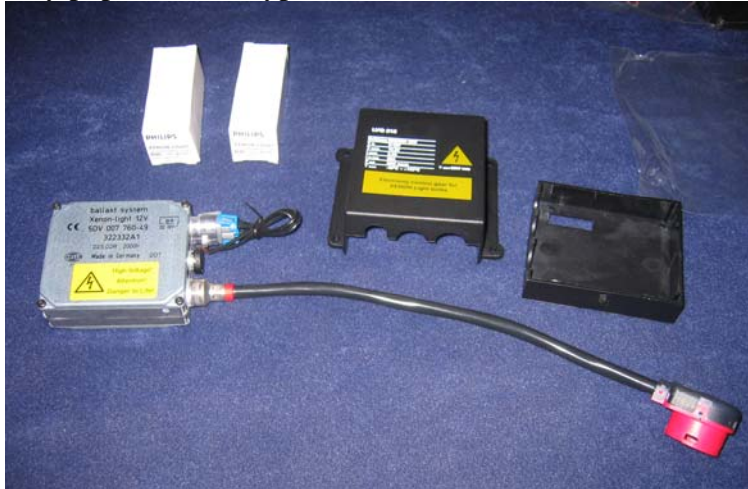
## '04 Acura TSX Projector retrofit into '98-'02 Camaro

Here is my retrofit install of HID Acura TSX projectors into my '02 Camaro SS. Please keep in mind while reading this that my methods are not necessarily the best methods, I'm just documenting the way that **I** did this install to **my** car. I cannot take responsibility for any possible damage that you may end up doing to your own car.

Now onto the good stuff:

Items needed:

- Oven for baking the headlights (do a search on ls1tech.com for the “whistler mod”). This is how we separate the clear lens from the headlight housing.
- 2 HID Projectors of your choice (2004 Acura TSX Projectors)
- 2 HID Ballasts (the big square power box) (Hella / Philips Generation 3)
- 2 HID Bulbs to fit your projector (usually D2S bulbs) (Philips 4300k D2S)
  - ([www.hidplanet.com](http://www.hidplanet.com)) sells a ballast, bulb, protection box package that is a very popular OEM type bundle. This is what I used.



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- RTV Silicone
- Dremel or Dremel type tool
- Wiring if you intend to make your own harness as outlined in step 7
- Epoxy Cement
- PATIENCE and more PATIENCE (this is a multi-day project).

Step 1:

Remove headlights from the car and remove the housing bracket from the actual housing. Then remove the headlight lens as described in the “whistler mod” (search ls1tech.com for this).

**Step 2:**

Now we start fitting the projector into the housing. You want the projector lens to be as close as possible to the headlight housing lens (leaving a little space to allow air to flow to keep things cool). The further back the projector is from the housing lens, the blurrier the cutoff line will appear and also you will run out of room to install the bulb and plug on the back of the bulb.

Use your dremel or regular drill with a hole cutter attachment to drill a hole in the back of the housing (centered on where the stock low-beam bulb attaches). Then slide the projector in from the front as shown below:



Note: start with a small hole and work your way larger to get the projector to slide further back into the housing. Test fit the housing in the car as you enlarge the hole to make sure you still have room behind the housing to get the bulb and plug in.

### Step 3:

Now that you have your projector positioned correctly, you can begin to permanently mount it in the housing. The TSX projector has 4 holes around the perimeter flanges that I used to mount the projector. I used threaded rod and nuts with loctite to fasten the projector to the headlight housing, but other projectors are different.

**\*\*IMPORTANT:** This is a good time to test the projectors aim and leveling with the headlight housings installed back in the car. You can use a flashlight shining through the projector for this or just stick your low beam bulb in it and turn the headlights on. All you want to do here is to make sure that the projectors cut-offs are both horizontal, and that they are aimed straight out, not pointing in at each other or away from each other. You will be able to fine tune the adjustment later with the stock housing adjustment screws.\*\*

When I was happy with everything, I added some epoxy over the nuts to make sure they stay in place. The front-bottom of the projector rests on the base of the headlight housing. I added some epoxy cement here as well to keep everything in place.



Step 4:

Now it's time to make it look a little better. There are a lot of ways to do this. You can use an OEM "shroud" to hide everything, but here's what I did:

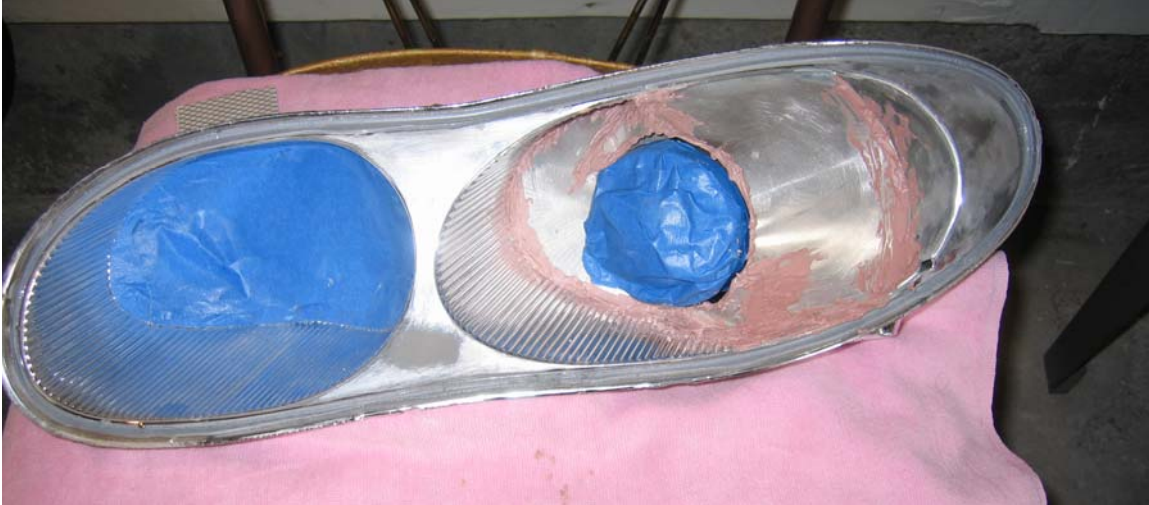
I bought some light gauge roof flashing from my home improvement store and started trimming and bending it into a shape that I liked.



When I was happy with the shape, I used epoxy at the seams of the flashing to the headlight housing. I also used epoxy where I had multiple pieces of flashing overlapping each other.



I then used regular Bondo to completely fill in the gaps and smooth everything out:



On the back, I used a lot of RTV silicone to seal up the hole in the housing for the projector to fit through. I also generously sealed around the 4 mounting holes with the threaded rod that I described in step 3.

Once everything was smoothed out and looking good, I painted the housing with gloss black (to match my SS grille and roof). I masked the reflector of the High-beam to keep this functional.



Step 5:

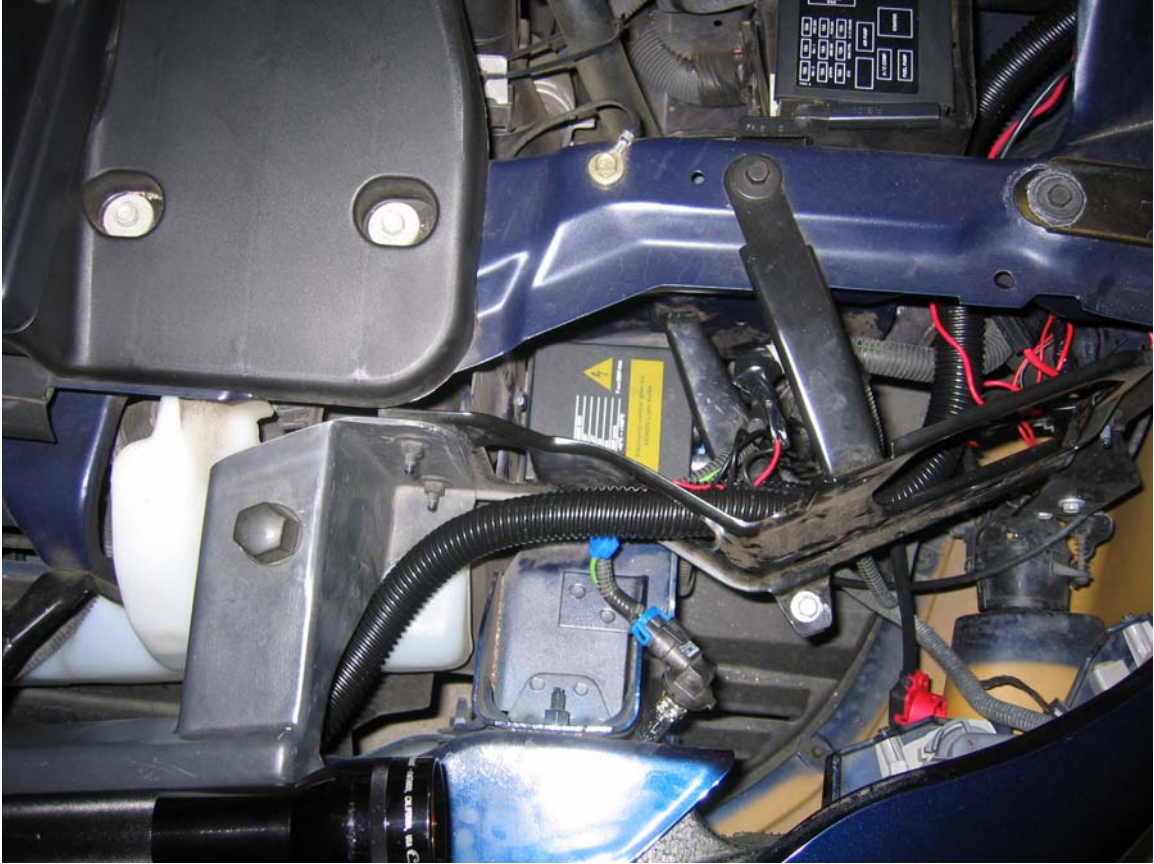
Now that everything looks good you can re-assemble the front housing lens to the headlight housing. Put a nice bead of RTV in the groove and put the lens back on. Once the lens was on, I went over the outer seam with another bead of RTV and smoothed it out with my finger. This will help prevent the housings from fogging up on certain weather conditions.



Step 6:

Now with the headlight out of the car, look for a good place to mount the HID ballast. I found a nice little “shelf” on either side of the radiator that worked perfectly since the cable from the ballast to the bulb isn’t very long.





The HID Planet kit that I mentioned at the top of page 1 comes with a ballast cover that snaps over the ballast to help protect it from water and dust. It also has 4 mounting holes that I used to screw the box down to the “shelf”. I used short self tapping sheet metal screws for this. You could also use double sided tape or Velcro, but I wanted a positive connection that I knew wouldn’t ever loosen up.

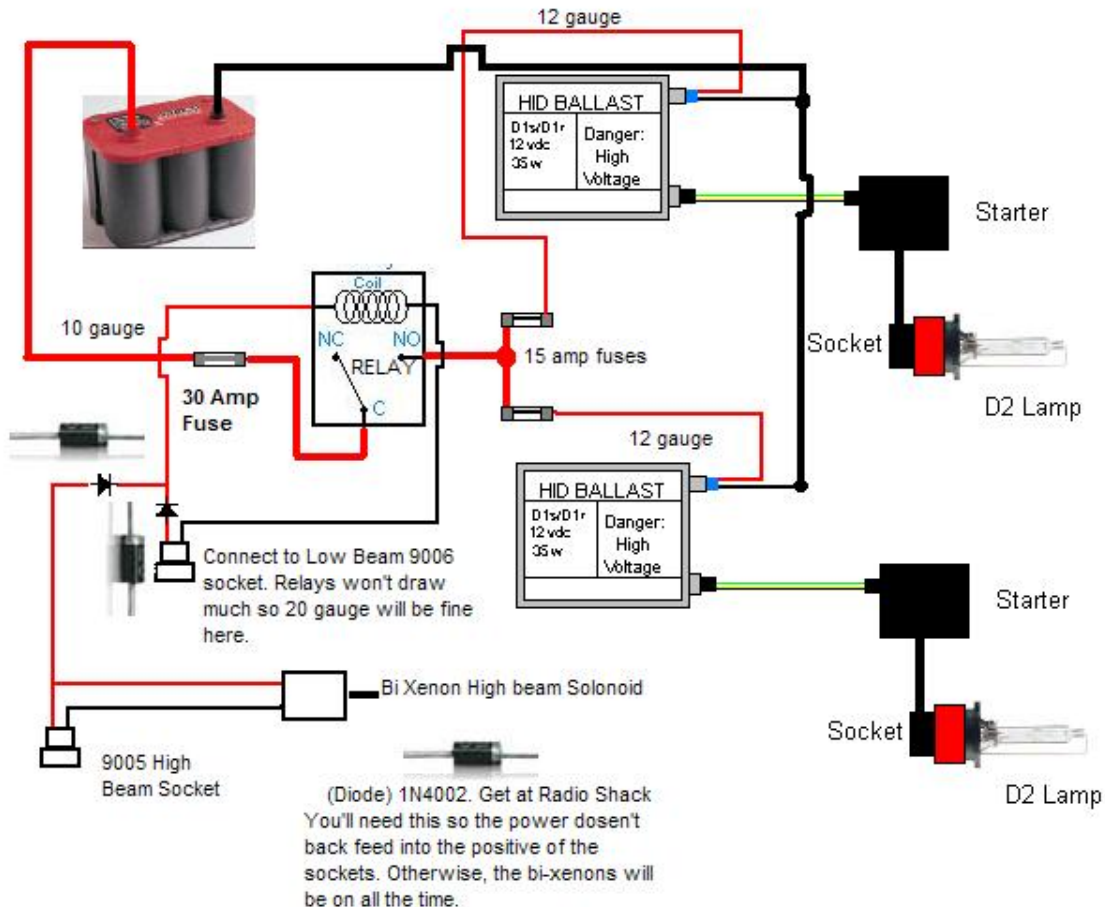


### Step 7:

Time for electrical wiring...

Some companies are now making pre-wired harnesses. I believe [www.kbcarstuff.com/](http://www.kbcarstuff.com/) / [www.xenondepot.com](http://www.xenondepot.com) has these pre-made harnesses.

I made my own harness. Here is the wiring diagram that I started with (Ignore the drawing of the Bi Xenon High beam solenoid, but you will need the diode from the high beam + to low beam +). Also instead of going from the battery, I put the 10gauge + to the auxiliary + post on the driver's side of the engine bay and for ground (-) I went to the post just above the auxiliary + post (near the shock tower on the driver's side):



I then went a step further and used 2 relays after the 30 amp fuse (40 amp I believe), one for each ballast. This way if a relay went out, I wouldn't lose both headlights. The markings on my relay were different; it just had numbers, so C=30, Ground=85, NC=86, NO=87 (red line to 15 amp fuse). I also used 16gauge wire instead of 20 gauge wire as indicated on the diagram.

The diodes in this harness keep the HID's on if you switch to your high beams (Make sure you orient the diodes in the direction shown in the schematic). Having HID's turn on and off quickly (flashing) is very bad for them since they require a warm-up of at least 30 seconds when they are switched on.

Also, since it's really hard to find a male 9006 plug, I took my old halogen bulbs and disassembled them as shown (keeping the leads at the plug intact)(the part on the right side of the picture):



Note: You do not need to do this to your 9005 high beams. You just splice into the + wire on the 9005 high beam harness with your diode to the 9006 + wire.

Once everything was wired up and tested ok, I wrapped any exposed connections with electrical tape and hid everything in a nice big plastic wire loom to keep things neat and tidy.



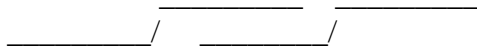


**Step 8:**

Now it's time to do some final aiming. The general idea is to park about 20 feet away from a wall on level ground. Measure from the height from the ground to the center of the projector, then go to the wall and the cutoff line should be about 2" lower than the measurement from the ground to the projector.



(Note my poor alignment job...the projectors are angled inward toward each other creating a "V" with the cutoff lines. The cutoff should look something like this:



They are also pointed inward so from a bird's eye view the beam looks like this / \ when it should be like this | |

\*\*This is why I said to check the projector positioning in step 3).

Once I went back and fixed the alignment, here is the outcome (sorry for the blurry pic): Notice on the far right hand side of the photo, the cutoff kicks up into the air...these projectors have that as a feature built-in to help illuminate roadside signs. Also on the left side, the beam does not just drop down vertically like that; you are seeing the shadow of the garbage can.



Final Product:  
(Before and After)







That's it! Remember to take your time, be careful and test fit/check beam alignment often. I did this over 2 years ago over the course of 4 weekends and everything still looks and works great with no problems. I'd like to thank the guy who installed Hella 90mm HID projectors in his camaro for inspiration on my project (sorry I forgot your name) <http://community.webshots.com/album/116863233uyEamc> I also used [www.hidplanet.com/forums](http://www.hidplanet.com/forums) (it's worth it to register and ask questions there) and <http://faqlight.carpassion.info/> extensively for research on HID aiming and creating the wiring harness. I'd also like to thank VIP1 on [www.ls1tech.com](http://www.ls1tech.com) for his work on compiling tons and tons of HID info into the "lighting FAQ" on ls1tech.