Clear Corner Lens Installation

These instructions were written and photographed by Arnell of S2Ki.com
They can also be found on S2Ki.com at http://www.s2ki.com/article/articleview/108/1/29

Installation Instructions
To avoid mistakes, please read these directions fully before beginning. Study the parts and pictures to make sure you know how to reassemble the parts you remove.

First off let me thank S2K0, SilverStreak, MKH, JerryPeterson, and others for their posts and suggestions. This would have been much harder without them. Disclaimer: I claim no responsibility for mistakes or injuries made by anyone using this post. This represents the actions I performed and are submitted as suggestions only.

Required items:

- 4-6 hours (if this is your first time performing this mod)
- Phillips head screwdriver
- Socket wrench
- Socket wrench extension
- 10mm socket
- 8mm socket
- Oven
- Damp towel
- Prying tool(s) like a flathead screwdriver(s) or small scraper(s)
- (2) 7440 bulbs[1]
- (2) 168 bulbs [2]
- Adhesive Sealant (like silicon)

[1] *I could not find amber 7440 bulbs locally and the bulbs I ordered from LightLens.com turned out to be dual brightness bulbs that were slightly different than 7440 bulbs. So, I used MKH's method and colored the stock bulbs with an orange Sharpie! There are several online retailers (some listed below) that sell replacement bulbs and I found similar bulbs at PepBoys (they would probably fit the 7440 socket but they were not the exact same bulb).*
[2] *I could not find amber 168 bulbs locally. However, 194 bulbs are the same design, are available in amber, and are supposedly brighter. I found these at several auto parts retailers and they work just fine.*

Sources for replacement bulbs:
ClearTailLights.com
LightLens.com
MatrixMotorsport.com
ImportTrader.com
AutoBulbDepot.com

Helpful items:

- T25 tamper-proof Torx bit
- Clean soft gloves (ones that won't scratch or mark the clear plastic)
- Service manual (Helm)
- Assistant

Note: I've indicated names of certain components from the Helm manual in quotes.

Front bumper Removal

The order of removing the bolts is extremely important and should be followed exactly! Just kidding - just make sure you get all the bolts off before attempting to detach bits.

There are 5 screws and 13 bolts to remove in order to detach the front bumper.

Figure 1 ***front bumper upper stiffener*** bolt locations (1-5)

1. Using a Phillips head screwdriver to remove the five black bolts holding the ***front bumper upper stiffener.***

Figure 2 Fender Bolt location

2. Using a 10mm socket, remove the two bolts fastened to the right and left fenders. (not shown but in same location as bolt 6 on opposite side).

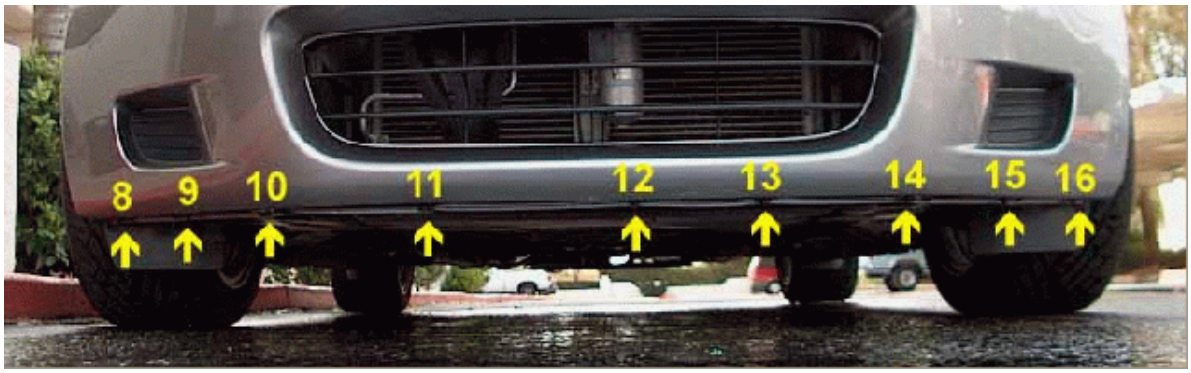

Figure 3 ***front under cover*** and ***inner fender*** bolt locations

3. Using a 10mm socket, remove the nine bolts holding the bumper to the ***front under cover*** and ***inner fender***.

Figure 4 Wheel well screw location

4. Using the 8mm socket, remove the screw on the inside of the right wheel well.(17)
5. Using the 8mm socket, remove the screw on the inside of the left wheel well.(screw 18 not shown, but in same location as 17 on left side)

Figure 5 Four bumper hooks under the headlights locations (circled in red)

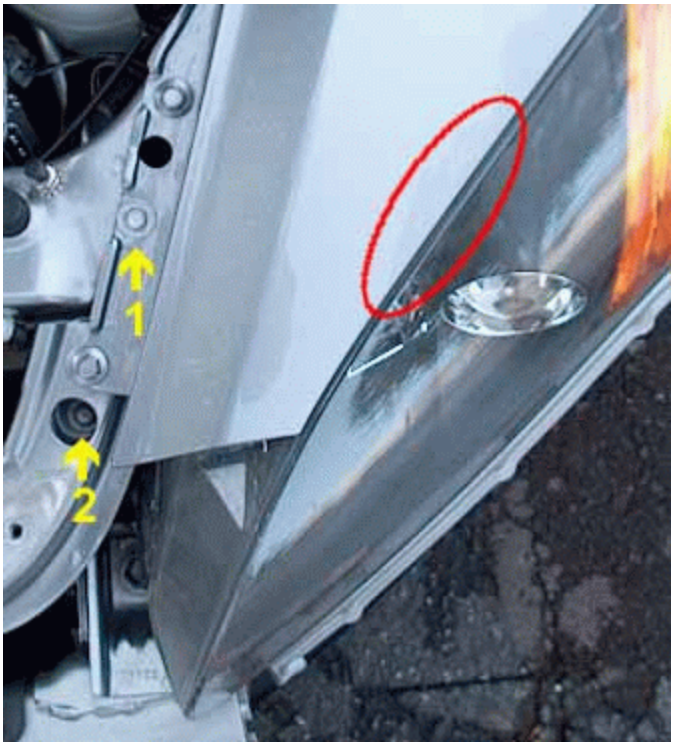

Figure 6 Two hooks under the fenders locations (circled in red)

6. Pull the bumper off by disengaging it from the four hooks under the headlights (Figure 5 circled in red) and the two hooks under the fenders (Figure 6 circled in red). This simply requires some tugging on each side of the bumper
   Note: The foam "absorber" may fall out when the bumper is free. It fits onto the "front bumper beam" via two round stubs.)

Headlight assembly removal

1. Disconnect all the electrical connections to the headlight assembly. There are four.

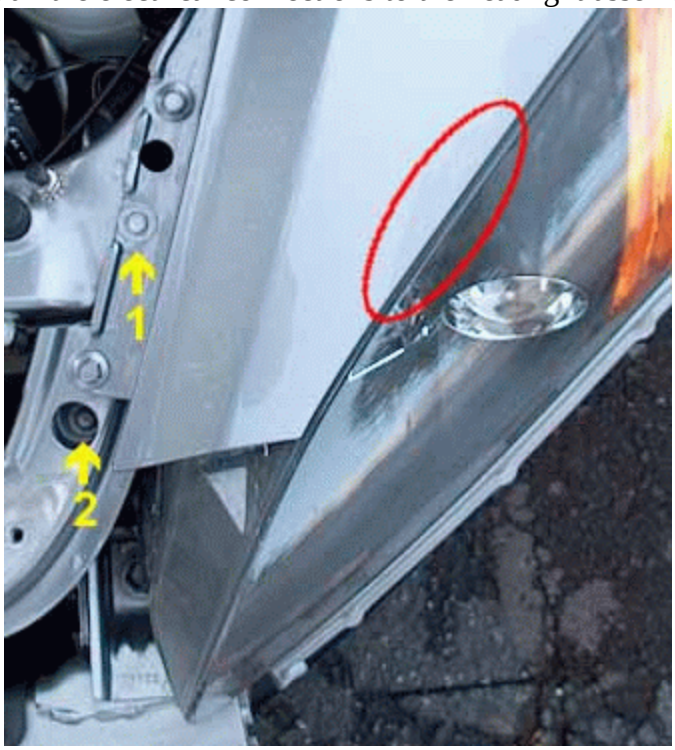

Figure 7 Headlight assembly bolt locations

2. Using a 10mm socket, remove the two bolts holding the headlight assembly to the fender.

Figure 8 *Corner upper beam bolt locations*

3. Using a 10mm socket, remove the four bolts holding the ***corner upper beam*** and detach. (3, 4, 6, and 7.)
4. Using a 10mm socket, remove the two bolts holding the headlight assembly to the fender. (Figure 8 - 5 and 8). The bolt 5 will require an extension on the

socket wrench as it is somewhat hidden between the fender wall and the metal brace under the headlight.

5. Remove the headlight assembly by maneuvering it around the various connection points.

Figure 9 What have I done!

Clearing the Headlights

Cook the headlights.

Others have stated they did not remove the sockets and the HID ballast from the headlight assemblies before baking them. I removed everything to reduce the chance of damaging something. Removing the cover to the HID socket required a Torx T25 tamper-proof bit, which I bought at an auto parts retailer. However, if you're not comfortable with this step it seems to be OK to bake the sockets and HID ballast along with the headlight assembly.

The actual baking of the headlights is subjective as well. I used a temperature of about 225F degrees for around 10 minutes and a second baking for around 7 minutes after getting one corner pried open. The goal is to simply soften the glue holding the black and clear pieces together. (With all the sockets and the HID ballast removed I did not worry about damaging anything with the heat.)

I placed the headlight assembly on a damp towel on the oven rack without pre-heating the oven (allowing the oven to heat up with the headlight assembly in it). After the first baking I was able to pry open one of the corners. Some have stated they did this with their bare hands but I used flat-head screwdrivers, a scraper, and a lot of cursing. The plastic is rather hot at this point and you may want to use gloves. Once the corner was pried open I baked it again to re-soften the remaining glue. I was then able to slowly pull apart the two pieces. (This step is where an assistant might come in handy by placing separators in between the two pieces while you pry them open. However, I was able to do it alone.)

Once the two pieces are apart simply remove the amber diffuser. It's loosely attached with small tabs.

At this point you'll realize you're only halfway finished so you may want to use the Holy Hand Grenade of Antioch and put yourself out of your misery. Consult the Book of Armaments and remember to count to three, no more, no less. Five is right out!

Clear Diffuser Installation

The Clear Diffusers replace the stock amber diffuser. There is a right side, and a left side. Simply replace the amber diffuser with the new clear diffuser. Please do the following before and during the installation.

1. Clean the new clear diffusers.
2. Reform the new diffusers (Fitment)
3. Complete diffuser install

Diffuser Cleaning

The Diffusers are packed at the manufacturing location after they have passed the QA process. Because of the way they are made, there will be a film on the Diffusers that needs to be cleaned off. You can feel this film; it is just like your hands after

eating a good greasy Hamburger. I used glass cleaner to clean mine, but you can use dish soap and water as well. You will feel when they are clean.

Diffuser Reforming

The curvature on the Clear Diffuser maybe slightly off, due to shipping and may need to be reformed before installation. To reform the diffusers, do the following:

- Warm the Diffuser with hot Tap water
- Dry the Diffuser
- Install the Diffuser on the reflector housing
- Let the Diffuser cool in place

Once the diffuser has cooled, and is completely dry.

I used 140 ° water and soaked the diffuser for 20 seconds. It felt very pliable once I was done. I then dried the diffuser by shaking off the excess, and using a towel. Then I mounted the diffuser where the amber one was located, and let cool about 10 minutes.

NOTE: Be sure they are dry before you reassemble and reseal the lamps)

Once the two pieces are apart simply remove the amber diffuser. It's loosely attached with small tabs.
At this point you'll realize you're only halfway finished so you may want to use the Holy Hand Grenade of Antioch and put yourself out of your misery. Consult the Book of Armaments and remember to count to three, no more, no less. Five is right out!

Reassemble the headlights.

Use some type of adhesive sealant and apply a bead inside the groove of the black piece where the clear piece fits in. (See Figure 8 for the type of sealant I used. I bought this at an auto parts retailer.) Ensure there are no breaks in the bead of sealant and be liberal with it - you want the headlight assembly to be airtight after reassembly. Place both pieces back into the oven to re-soften the old glue. I put them back in at 225F degrees for about 7 minutes. Push the two pieces back together and verify each tab is locked. Mine required another trip to the oven so I could push the two pieces together even more. After the second baking I wrapped the headlights with a towel and wound a strong string around the two pieces so continuous pressure was applied while the sealant cured. (If you do this just make sure the towel is lint-free and the string will not "shed". I had some lint and string-stuff make its way into the headlight assemblies after they were sealed. It was a big pain getting that stuff out.)

Figure 10

Allow the sealant to cure and the headlights to cool to ambient temperature. I only waited an hour or so for this but I live in Phoenix and the humidity was extremely low when I did this. (I can imagine that if you live in a humid environment this step is crucial to ensure no condensation occurs inside the headlight assemblies after all the components are replaced and the headlights are airtight.)

If you so desire, remove the clear turning signal bulb and running light bulb and replace them with your new bulbs. As I stated above I used an orange Sharpie marker to color the turn signal bulb. Replace all the sockets and HID ballast if you removed them.

Reinstall the headlights and reattach the bumper.

Re-attach the four connectors to each of the headlights and work them back into place. Getting the headlights back in is a bit tricky - it takes a little bit of wiggling. Take note of the small black tab on the top of each headlight assembly. It is in the area of the red circle in Figure 7. This tab fits into a hole in the underside of the fender. If you don't get this tab into the hole the headlight will not be flush.

Bolt the headlight assembly in and re-attach the "corner upper beam" as shown in Figures 5 and 6. Don't forget the hidden bolt (#5).

Re-attach the bumper by pushing it back into position. Ensure the bumper slides into each of the three hooks noted above (circled in Figure 6). Also, make sure the foam "absorber" is in place before the bumper is re-attached and the "inner fenders" and "front under cover" are tucked into the bumper.

Bolt the bumper on and re-attach the "front bumper upper stiffener" as shown in Figures 1, 2, 3, and 4.

Headlights Adjustments

I did not adjust mine after performing this mod as they did not need it. However, you may need to adjust yours. To do this use a Phillips head screwdriver and turn the small ***vertical adjuster*** that is on the back of the headlight assembly. It's accessible through the inside of the engine compartment via a small hole in the fender wall. Figure 11 shows the gear-like adjuster.

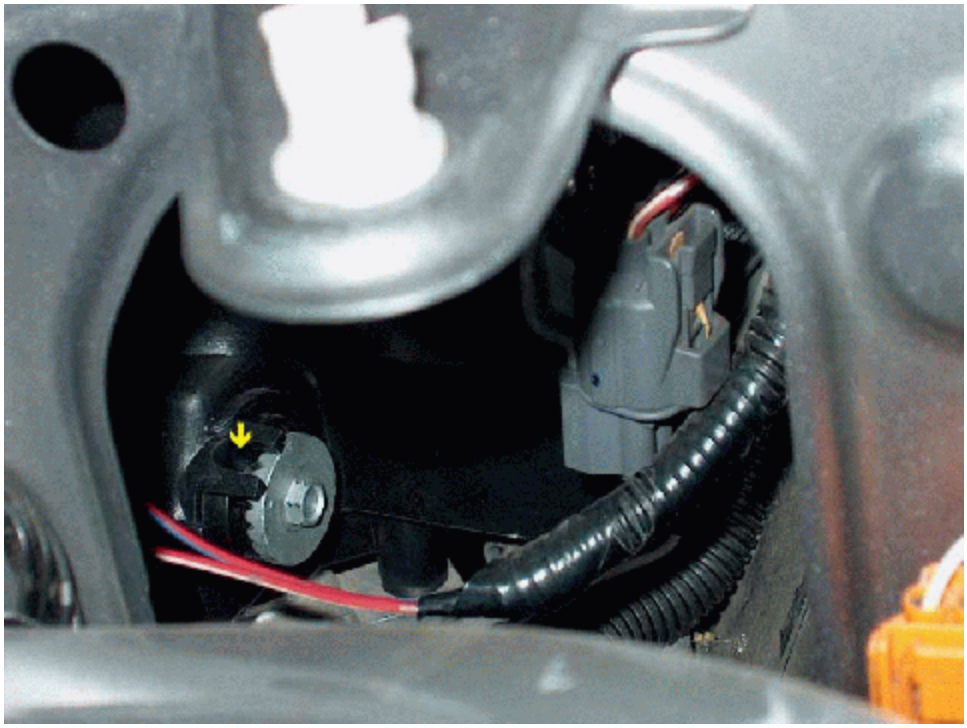

Figure 11 Headlight ***vertical adjuster*** location.

The Helm manual states local requirements will dictate where your headlights should be but it also indicates a standard adjustment:

- Park the vehicle on a level surface.
- Make sure the tire pressures are correct.
- The driver or someone who weighs the same should sit in the driver's seat. (This seems like overkill.)

1. Clean the outer lens so that you can see the center of the headlights. (There is small cross-hair in the clear plastic directly in front of the HID lens. This is considered the center of the headlight and where all measurements are taken.)

2. Park the vehicle in front of a wall or a screen so that the center of the headlight is 7.5m (25 feet) away from the wall or screen.

3. Turn the low beams on.

4. Determine if the headlights are aimed properly. Measure the height of the headlights (from the ground to the cross-hair). The edge of the headlight beam projected on the wall should be 52mm (2.1 in) below the height of the headlights.