Converting S1 ½ headlamp sockets to simulate S1 closed style.

I performed this modification to my S1 ½ over 20 years ago while restoring the car and didn't document the mod very well. Pictures are after the fact.
There are a LOT of details that aren't covered because I just don't remember *exactly* what I did back then. If you attempt this, be prepared to do a lot of trial fitting and fiddling till things fit.

1. The S1 ½ headlamp socket (or sugarscoop) has a lip that sits on top of the wing and bonnet centre section. It is held in place by pop rivets that include a metal 'bead'. This bead holds the chrome trim in place. Start the mod by removing the sugarscoop from the car. You will also have to remove the bonnet panel that's immediately behind the scoop. THAT means you have to find some way to hold the bonnet up since you have to remove the spring mechanism.
2. Drill out the spot welds that hold the inner headlamp support and outer scoop together. I don't remember if the outer scoop is a complete ring or has a gap. If it is complete, cut it on the top. You'll have to remove a bit to allow the scoop to be slightly recurved.
3. Stick the scoop INSIDE the opening in the bonnet with a headlamp. Fiddle with placement until the headlamp will clear a plastic cover. I used bits of wood and styrofoam to hold the headlamp and small nuts and bolts in the rivet holes to hold the scoop in place. I seem to remember that the scoop had to be reduced in diameter a bit to fit the opening properly. This means that the piece that supports the headlamp also has to be cut and made smaller a bit. Don't forget that you also have the bowel, adjusting mechanism, and spring to place in there. I fiddled it all until the headlamp was placed far enough inside the opening that it would just clear a plastic cover (it didn't by a little bit).
4. Clean all paint from the outside lip of the scoop and the corresponding inside area in the wing/centre section opening. Tin these areas well. I'd bought a two hundred watt soldering iron for lead work which worked well. I also soldered the inner headlamp support to the recurved outer scoop. I wanted to be able to unsolder the assembly should I discover down the road that I'd screwed something up. Using a bunch of small nuts and bolts, I held the scoop assembly inside the opening and soldered it securely in place. While soldering doesn't sound strong, in over twenty years it's held just fine. While repainting the bonnet I used a bit of lead to seal the opening below and above the headlamp opening. I also smoothed the scoop to bonnet joint.
5. Stuff some cardboard into the opening to fill it within about 10 cm of the 'surface' (where the plastic cover will eventually be).
6. I used Plaster of Paris and reinforced it with the open mesh fiberglass tape that's used when joining Gyproc (wallboard) to build up layers until it was even with the bonnet and followed the shape nicely. Although Plaster of Paris isn't supposed to shrink I let each layer dry thoroughly. It was then sanded smooth.
7. I Covered this with several layers of plastic wrap and did my best to remove all wrinkles. I then made a cardboard dam a few cm outside the opening and using the same technique, made a female mold about 6 or 7 cm thick.
8. All molds (4 in total where carefully removed and placed beside my woodstove for a week to thoroughly dry. I brought them to a body shop to have several thick coats of epoxy primer applied. I sanded this smooth with 600 grit wet paper then waxed it.

9. Here are some pictures of the molds. The one shown has a styrofoam backing which has held up well over the years.
With both molds ready, you can do some thermo-forming. If you're a plastic modeler and have done any vacu-forming, you're ahead of the game. I used 3/16 plexiglass for my covers. Pre-heat your oven to 275 degrees Fahrenheit. Place something non-combustible on the middle rack to hold the plastic around the edges. I used a square pan about 2 inches deep. Place the plastic in the oven and watch it closely. When it sags in the middle (7 minutes?), turn it over. You did wear oven mitts right?! When it sags again, remove it and place it on the female mold. Place the male mold over it and press down...hard. Hold for ten minutes (no kidding). The plastic will hold the heat a long time and the mold acts as an insulator. I placed my female mold on a pillow on a chair then simply sat on it.

10. Once the cover has cooled it can be trimmed to fit. Cutting by hand with any type of saw is doomed to failure since the blade quickly heats up and welds itself to the plastic. I used my table saw with a combination blade . It worked very well with only a bit of chipping. I removed the guard and was VERY careful.

11. Here's one that got a little melted (crazed) from the oven but I kept it to practice with.

12. Here it is trimmed to size. Note that I have the original chrome trim rings installed around the headlamps. They *just* fit in the opening.

Next...the chrome trim rings...

1. I went on a road trip to visit the nearest Series 1 car. I never need an excuse to visit Nova Scotia (my old stomping grounds and where my daughter now lives) but this gave me a good reason. I took lots of pictures and made even more measurements. I also used a profile gauge to get an exact profile of the molding.

12) I laid out a few layers of masking tape followed by a layer of Teflon tape.

3) I drew the profile on the tape, then using fiberglass reinforced body fill I began making the shape. I embedded several loops of coat hanger wire to add strength.

The funny looking aluminium thingy is a profile gauge I made from a profile taken from an original chrome trim ring.

Here's the (almost) finished ring. Mounting holes are close to being in the original locations and have been countersunk to accept original screws. The ring is slightly larger than the original but so close that you'd have to measure them both to see the difference. I did a LOT of sanding to get it just right.
I drilled holes in the body corresponding to the mounting holes in the trim ring. The screws are secured by nuts on the inside. I access them by reaching around through the opening inside the bonnet air intake. Yes, I have long skinny arms. My plan is to (eventually) put captive nuts inside the bonnet.

Here's a view of the rear panel that I had to modify. With the headlamp bowl now sitting further back, I had to modify this panel. All I did was cut out the centre area then solder in a cut down part from another set of headlamp bowls.

Here's a couple pictures of the finished product. The interior was painted Volkswagen silver grey (Dupont Acrylic Enamel 8537IE) which the forum collectively has determined is a match for the original silver (no, it's NOT hammertone!). The trim rings where painted in chrome. They look pretty good although obviously not as good as real chrome. I'm looking for a company to cast them in aluminium which I can either polish or have chrome plated.

Other points....

1)There's a lot of details which are not covered here. I did this so long ago that I don't remember each step. I also didn't take pictures.
2)Note that the drain tube is visible. You'll need this since even with a foam gasket they do leak a bit. After a long drive in the rain there will be water in there. They also fog up a bit in the rain. This doesn't seem to affect the light output and pattern in any discernible way.
3)The plastic cover has only a minor effect on the light beam. I checked the light output at the hanger where I work late one night after flying was finished and all the planes where tucked in for the night. It's a long flat area with white hanger doors which is perfect for REALLY adjusting headlamps. I compared the beam pattern and strength with the covers on and off and saw little difference. They do spread the pattern a bit and there's some side scattering but it's quite minor. Standing a hundred metres in front of the car and having someone remove and replace the covers confirmed this.

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