Little British Car Company
MGA LED Kit Headlamp Installation

At NAMGAR's GT-44 in Dubuque, IA, I stopped to talk to Jeff Zorn (LBCarCo.com) about his LED MGA headlamp kits. While not a fanatic regarding originality, I do try to make my upgrades minimally intrusive and keep the driving experience close to what I recall from the late 1950s. Jeff and I chatted for bit. He provided some references and considerations. I toddled off and talked to some people who had made the switch. The consensus was that the upgrade was a positive step, though no one provided an especially glowing report. The other reason I was considering the upgrade was I recently underwent cataract surgery, which literally changed my view of things. While positive in many ways, there were shortcomings, like a reduction in my night vision.

Before I left, I bought a headlamp kit from Jeff, with a promise that I would write an article about my experience.

I also replaced the aged, cloth wrapped wiring from the main wiring hardness to the headlamp buckets. While not a necessary step, if your headlamp wiring is using the old cloth wrapped wiring and it is cracked and frayed, now is the time to make the replacement. The expense is less than $12 for both. The part number from Jeff is 171-400 (Wires and Plug Assembly, you would need 2)

What I focus on here is just the headlamp kit assembly and replacement.

Assembling the Kit

You receive from Jeff two headlamp lenses and two headlamp LED bulbs. The lenses and the bulbs must be mated before headlamp replacement. Here's what I learned: all the parts can only be assembled and replaced in only one way, *EXCEPT the bulbs themselves*. *During the assembly the bulb can be inadvertently inserted into the lens upside down.*

Here is my recommendation for assembling the headlamp kit:

- Work at a time when you will not be distracted by anything.
- Work in an area that is clean and free from clutter.
- Have a general cleaning solution (like Windex) and wipes handy. One of my lenses was coated with light oil from the manufacturing process.
- Examine each lens when you remove it from its box and check to insure there is no foreign material inside the lens itself. One of my lenses had something that looked like packing material floating around inside: I just shook it out. (talking to Jeff, turns out these are all assembled by hand)
- If there are rubber dust excluders with the lamps set them aside for the moment and do not remove the temporary mounting hole covers from the lenses.[1]
- Now open the bulb box to expose the bulbs and remove any material covering them.

[1] The dust excluders may or not be part of the kit. Apparently, they are not included in kits *shipped* by LBCarCo and are not needed.

The bulb instructions that come with the LED bulbs would have you remove the bayonet mount from the bulb itself. DO NOT DO THIS! Doing this disrupts the relation of the bulb to the mount and offers the opportunity to reinsert the bulb incorrectly. In addition, the instruction is misleading on the action required to separate the bulb from its socket. To install them in the lens it is not necessary to remove the LED bulb, it will fit into the lamp as is.

So instead:

- Take your first lens and place it in front of you, facedown, with the top oriented away from you. There is an arrow on the front of the lens which indicates up (top).
- Undo the wire bail that holds the temporary cap in place and remove the cap.
- Now take a LED lamp with its mount still intact and insert it into the lens mounting hole. *It can only be inserted one way*. It's a tight fit, so be careful. Once completed, the bulb will now be inserted into the lens properly.
- Now carefully route each bail wire around the lamp transformer and into the clasp.

The last step is to place the dust excluder between the lens and the bulb.[2] It doesn't look like it will fit, but it does. For this, grasp the bulb transformer with two fingers and rotate it counterclockwise until it stops and gently lift it out. With your other hand, place the large end of the dust excluder over the mounting location and then re-insert through the small opening in the excluder and into the lens mount in the reverse of the way you removed it: rotate it clockwise until itstops. Voila! You're done and the bulb is correctly inserted in the lens. Repeat the process for the other lens.

Replacing the Headlamps

At this point, installing the new headlamp assembly is the same as replacing a regular headlight. If you haven't done this in a while, here are some reminders:

- Don't forget to remove the screws, at the bottom, that hold the headlamp trim rings in place.
- Don't use a screwdriver to pry the trim rings off. You will damage the paint and, likely, yourself. Use a bodyman's plastic trim tool or some other plastic or wooden pry. Work carefully and deliberately. If they haven't been off for a while, it may take some time.
- So you won't lose the itty-bitty screws when removing the headlamp holding rings, have something magnetic handy to capturethem, or you'll have to chase them around the floor.
- The new headlamp assembly can only be installed one way. There is a small arrow indicating "top" on the lens. Make sure it points up and the lamp seats before you re-install the holding ring.
- *Do not return the trim ring. You will need to re-aim the headlamps.*

[2] There has been some discussion regarding the need for a dust excluder. Consider the dust excluder optional.

Aiming the New Lamps

The beam configuration is different than the normal seven-inch, tungsten sealed beam headlamp: adjustments will be necessary, if you want to be a good motoring citizen. If you have a certified headlamp adjustment tool, great! Otherwise, there are plenty of resources available that explain LED headlamp adjustment. The LED beam differs from the sealed beam in that the majorityof light is directed down and there is a noticeable light drop-off in the vertical direction. The light is whiter, more intense and broader than a normal sealed beam. The objective is to illuminate the road, not the face of the oncoming traffic drivers or the interior of the car in front. That's why there is a high beam!

Since the MGA is a three-point adjustment system, remember that any adjustment on one adjuster will/may affect the others. Start with all the adjusters at least half-way out to allow some room. I used a technique I found on-line to make the first adjustments. Then late one night, while the trim rings were still off, I set out to find a road with no traffic and made the final adjustments.

Now the top of the beam terminates about three seconds ahead of the vehicle at a speed of roughly 35 mph. Near-by signs are well illuminated, while signs much further out are barely illuminated. My last adjustment was to raise the right lamp up and out ever so slightly. We live in a rural area, and there are all sorts of critters lurking along the side of the road.

When you've locked in your adjustments, go home and install the trim rings. Don't forget the screws to hold them in place.

Trouble Shooting

About the only problem you can have is an incorrectly inserted LED bulb in the lens. If the beam looks odd, pull the front end of the MGA about five feet from a smooth wall where you can clearly see the pattern. The pattern should look like a bowl of light: flat-ish on the top and rounded on the bottom. If a beam is flat on the bottom and rounded on the top, the bulb is incorrectly installed and needs to be turned over in the socket.

Also, when you look at a bulb from the side, there are two filaments. The front filament is in line with the horizontal axis of the bulb: that's the low beam filament. The one that sits behind it and lower in the bulb, is the high beam filament. When inserted correctly in the lens, the high beam filament will be at the bottom.

The Results

Without going into a lot of technical jargon about the differences between sealed beam tungsten or halogen and LED headlamps, I can say that LED light is much, much whiter. Reflective signs, road markers and painted striping with powered reflectant literally scream that they are there. The whiter light also helps dark road surfaces stand out a bit more. These LED lamps are not a match for the VW's Xenons, but since I don't drive as often at night with the MGA anymore, they are a reasonably good substitute.

On a recent overnight trip that ended up being considerably rainier than what we planned, the lamps were lit for the entire trip, day and night. If you are considering buying this kit to make you more visible on the road, the results are mixed. We had at least three encounters on state and county routes, during daylight, where another car decided we must have been a mirage and pulled in front of us. Apparently, we didn't show up on their cellphones.

On the other hand, the life of a raccoon was spared last evening as well as some MGA body parts, because we were able to see the critter much more clearly with the LEDs than the sealed beam halogens that would have been in the car.

Aesthetically though, there is something un-nostalgic about seeing an MGA coming up the road with pure white headlights and yellowish trafficators and running lamps. It's eerily reminiscent of scenes from *Close Encounters of the Third Kind.*

I guess I can live with it to see better while night time driving.