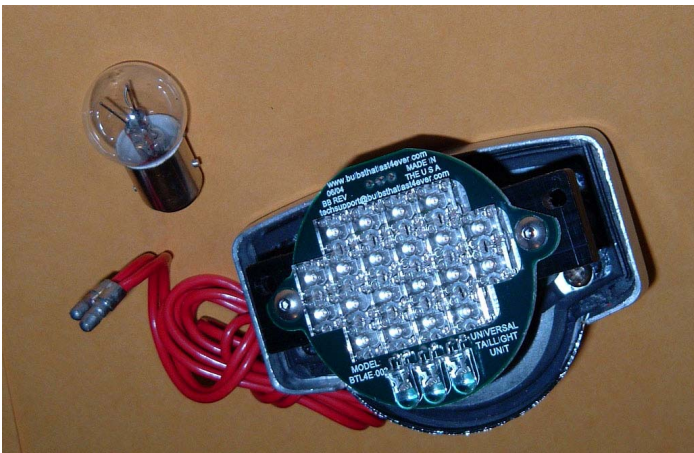


Product Review by Bill Silver: LED taillight conversions for 1960's Hondas

I have been in contact with Mr. Bruce Branstad of www.bulbthatlast4ever.com, over the past year, learning about his low-voltage, high intensity taillight conversion for various model vintage bikes, including many Hondas from the 1960s. Apart from his LED lighting business, Bruce has become a fanatical Honda Dream owner and, of course, you know that he would apply his technology to a Honda Dream taillight. Unlike many other motorcycle manufacturers, who had many tail light applications for their models, Honda saw fit to put the same tail light assembly on many models of their machines from 1963 to 1967. The range of machines includes C100/110, S65, CA95 (late), all 160 twins, all 250-305 twins (other than late 1967 and pre-63s), CB450K0 Bombers, plus a few other machines built during that time. The tail light assembly was sourced from the CB72 (268 code), used from 1963 onwards. Very early Dreams and CB72-77s had other shaped light assemblies. When the basic shape of the CB72 light was put into production, the 1962 versions had 268-810 "short" lenses, which were lengthened to the current 268-680 lens, in 1963. This information applies to US models, specifically. So, enough with the history lesson, let's see what LED technology can do for vintage Honda owners.

The test unit I received was part of an exchange for a copy of my Dream Restoration Guide file set. Bruce was glad to have me do an evaluation and keep the unit for the future, for which he received the CDROM full (nearly 700MB) of my Dream research. Although, I don't have a suitable application for the light assembly, I am sure that something will make itself available in the future, so I am pleased to have one on hand.

Using the still, readily-available "Superior" tail light assemblies for the test unit, he sent the light assembly, plus a carefully packed LED conversion kit, with complete and detailed B&W installation instructions.



When you compare the little 18/5-watt conventional tail light bulb (equivalent automotive number #1157) to the massive LED panel, you get the feeling that there is going to be a big difference in the light output, even before it is installed. LEDs are not light bulbs, but are "light emitting diodes," running on a fraction of the power required to power a conventional 12v light bulb.

When they are properly designed and mounted, they give a trouble-free light source for tens of thousands of hours. The current draw for this LED array, including specific LEDs mounted for license plate illumination is as follows: LED *Running Light*: .12-.15A and *Brake Light*: .7-.75A vs conventional #1157 incandescent bulb: .42A *Running light* and 1.5A *Brake Light*. So, the running light LED is at 1/3 the amperage draw of the regular bulb, while the brake light is 1/2 the power draw of the 1157 bulb. When both lamps are lit (tail and brake light ON), you have the LED drawing slightly over 1 Amp total and the 1157 bulb running at nearly 2 Amps. As I was testing the two

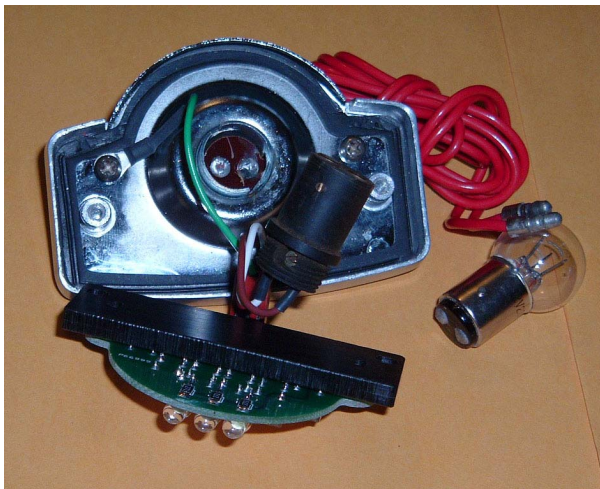
Product Review by Bill Silver: LED taillight conversions for 1960's Hondas

types, head-to-head, on a small one-amp battery charger, the light bulb heated the light assembly quickly. When I stopped to switch out the bulb for the LED conversion, the bulb was just at the edge of being too hot for me to remove comfortably, with my bare fingers. Later on, when I left the LED running for a couple of minutes, the heat on the taillight assembly was barely warm to the touch.

Honda 250-305 twins with the low output alternator only create about 1amp excess when running and that is with the charging system in perfect condition. Adding the LED light will relieve the charging system of the extra draw, especially when the lights are all activated. *Below is the standard bulb installed, first on taillight, then on brake light.*



I removed the bulb that came in the light assembly and then checked the LED kit package for components and looked at the instructions. The green ground lead is installed with one of the two mounting plate screws, then the bulb socket adapter is inserted into the existing bulb socket. On the part that came with the kit, what would normally be the two locating pins, which determine which filament gets fed from what circuit, the small brass locating pin barely rose above the surface of the adapter.



Fortunately, the socket was a snug fit and the pinned adapter could only fit in one way. At first it seemed like the lack of the opposite side pin would cause the socket to be loose or loosen over time, but the installed fit felt pretty solid. I don't know if the locating pins are supposed to be configured like this or not. *(Bruce has since mentioned that the adapters were a surplus marine part, not originally configured for offset 1157 pins)* With the current depth of the adapter, the LED plate gets pushed outwards towards the face of the lens. *More about that below.*

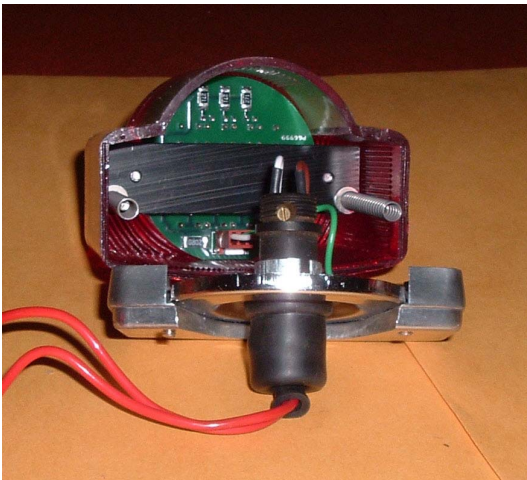
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The actual locating of the LED plate is a clever idea, but with the "Superior" lenses, an accommodation must be made. Apparently, the OEM Honda lens has deeper screw locating bosses, so the actual location of the LED plate is further away from the face of the lens, setting it closer to the middle of the clear license plate window at the bottom of the lens.



From this photo, you can see the final installed location of the LED plate, which is considerably forward of where the regular 1157 bulb would sit. Without an OEM lens to compare the locations, it seems like a Catch-22, where the LED plate is closer to the face of the lens (towards traffic), perhaps there is a brighter illumination of the lens face. However, the location restricts the amount of light available to the clear license plate window, on the bottom.

Bruce noted that the lens bosses were shallower on the Superior lens, so he sent along a longer set of tension springs, to help take up the difference in distance. The spring lengths are longer than the screw lengths, in order to help hold the LED plate in position. OEM Honda lens applications received different hardware to locate the plate more in the center of the light assy. I experienced a

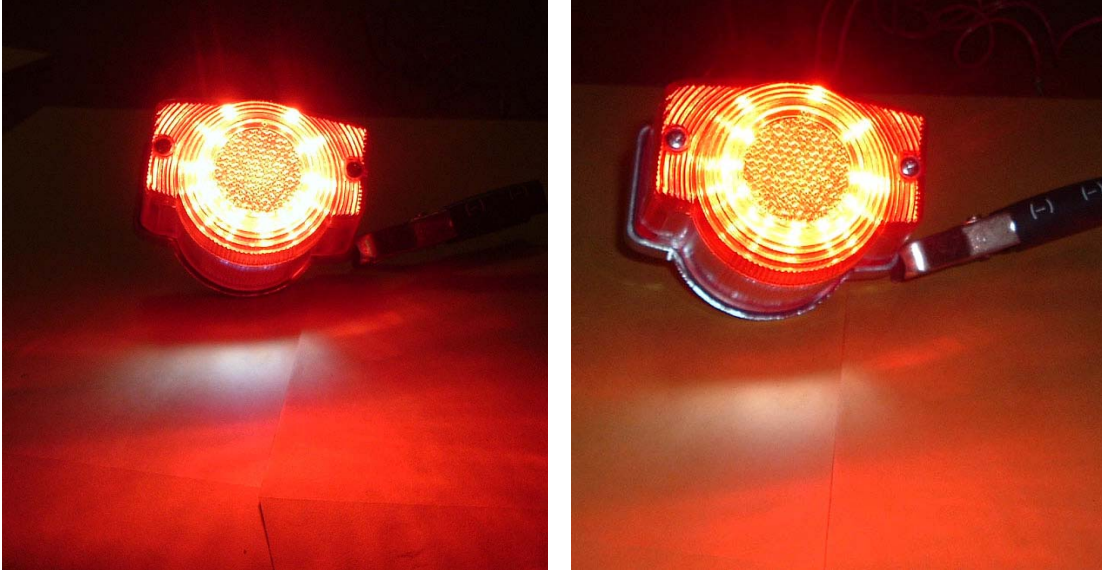


little assembly challenge, when I was trying to place the lens, with all components installed correctly so the screws would start in the mounting plate. I found that holding the whole assembly horizontally, then just starting one screw a few threads, allowed the lens to ride up away from the plate enough, so I could observe the position of the other screw/spring set. It is easy for the spring to slide off beside the screw mounting boss, which prevents the screw from catching threads on the plate boss.

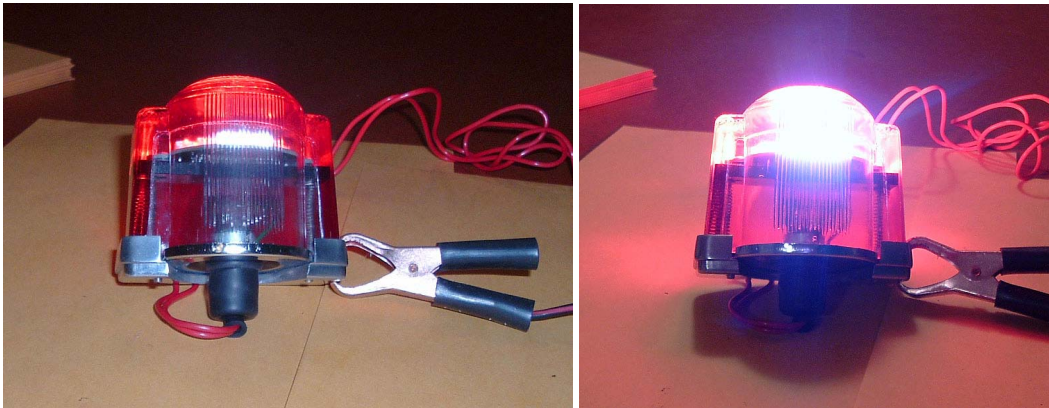
Once you get both screws started, the lens will line up correctly with the mounting plate and pull into the lens packing snugly.

After that, all you would have to do, when using the Superior light assembly, is to play with which wire feeds the tail and brake light sections. OEM Honda wiring is self-evident with blue and white wires leading to the matching ones in the harness leads.

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You can see the tail light (above left) and brake light (above right) have a dazzling and radiant light pattern, but the license plate portion is some what dimmed. When seen from below, I got two different images (see below), depending on the angle of the camera and which light section was being activated. *Note: photos were taken with my digital camera, using flash and not using flash to see which would yield the best contrast images. Flash was used on the left photo, but I deactivated it for the one on the right side.*



You can see the intensity of the LEDs, especially when the flash didn't over-ride the lighting. This also illustrates how much of the clear window isn't being used due to the LED plate location. Without having a bike with bracket and license plate to mount the light on, I can't really judge how well the license plate will be lit during nighttime operation. While some people would rather not have their license plate illuminated really well, the benefit is that it adds more visibility to the rear of the bike. Most 1960s Hondas, in the US, don't have any turn signals or other rearward lighting, whatever you can do to help drivers behind you see you and your machine in darkness can only benefit you in the long run.

The components of the circuit board and LED array are all of very high quality and are guaranteed against defects for 1 year. The ground wire terminal end was sized to

Product Review by Bill Silver: LED taillight conversions for 1960's Hondas

fit the mount screw, correctly, as were the springs and washers used for securing the LED panel plate. The units are available in 6v for smaller Honda machines, as well as for various configurations of Brit Bikes. A new series of turn signal kits are now available, as well, fitting late 1960s thru 1970s turn signal assemblies.



Many of you have had problems with tail light bulb failures, either damage to the filament from vibration, broken ground wire leads or from voltage surges. This appears to be a solution to many of the problems inherent in the OEM Honda lighting assemblies. The true test will be for a few CL77 owners, who really ride their bikes a lot, to determine if these LED lights are up to the high-frequency buzzing of the Scrambler's light assemblies.

From the workmanship, design and overall appearance, the LED lights from Bruce's "Bulbthatlast4ever" company may be just what you need to ensure that you have bright and reliable lighting on the back of your vintage Honda.

Rating: "Two Thumbs UP" from Mr. Honda!

Bill Silver 9/2006

www.vintagehonda.com