

Headlight bulb upgrade to LED

Those of us whose bikes run with low output old electrical systems have benefited greatly from the availability of LED bulbs and I've been gradually replacing the filament bulbs on my Norton. This is to help reduce the load on the 46-year old charging system as much as it is to increase bulb brightness.

The one I've left until last is the headlight. My Commando has an original Smoking Joe Lucas 7" headlight fitted with a quartz halogen bulb rated at 60/55W. Although this provides a good light for night-time riding, I've noticed that the charge warning light illuminates a little too often for my liking. The alternator is rated at just 110W. The original bulb was a 45/40W tungsten filament one (Lucas Type 370) which is very much in 'Prince of Darkness'/'Toc H Lamp' territory.

Up until relatively recently the only LED headlight bulbs available have not had a good reputation as they've tended to illuminate the trees above the road rather than the road ahead. Paul Goff will be a familiar name to those that have gone down the LED route and he now supplies a suitable LED headlight bulb known as the H4 'Daylighter' which he rates at 70/60W equivalent but which only draws 25W. Paul's website address is <http://www.norbsa02.freeuk.com/>



Illustration 1: LED Bulb



Illustration 2: Fitted to the Wipac H4 headlight reflector (S4700)

This is how it all went. I've named suppliers and stated costs which include post/packing and VAT. Other suppliers are available.

The first issue was that the original headlight reflector and connector are the old BPF (British Pre-Focus) P36d type. So to use the bulb I would need to change the reflector to the later P43T type. This is not a problem as H4/P43T type 7" Lucas and Wipac reflectors are widely available. I went for the Wipac Quadoptic unit S4700 which cost £22.12 from Auto Electrical Parts UK. This is slightly shallower (around 12mm) than the Lucas one and allows a bit more room in the headlight shell for the larger LED bulb heatsink and connector. I also noticed that the original Lucas reflector was showing a few rust spots on the reflector mirror – not bad after over 45 years service.

An H4 472 type connector was also required which I obtained from eBay (alm_electrical_solutions) for £3.55 for a new Durite one. I prefer to wire my own using original wiring colours as I'm trying not to be the 'dreaded previous owner'. I have a

good friend whose Yamaha XS-650 was entirely wired with black wires. What fun was had by the aircraft engineer who re-wired it correctly.

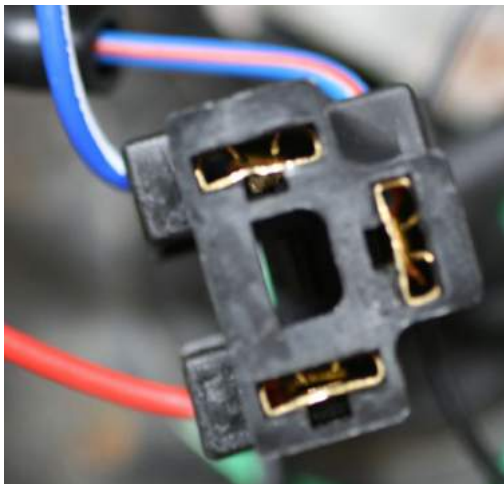


Illustration 3: Durite H4 Connector

My job went pretty well – just one blood blister on my thumb from the scary ‘W’ clips which hold the reflector in the headlight rim. I called them something else as I struggled to remove my trapped thumb from their vice-like grip on my ageing skin. As I had anticipated it was a bit of a squeeze fitting the bulb and connector in the headlight shell – glad I got the shallower reflector – and I also made a bit more space by re-routing some of the earthing wires to the earth point in the shell.

I’m very pleased with the results and I could use the headlight on dipped beam all of the time if I chose to.

Illustration 4 compares the dip and main beam images for a Lucas halogen 60/50W P43T bulb and the ‘Daylighter’ LED, both fitted in the Wipac Quadoptic reflector, projected on to a partition in my garage.

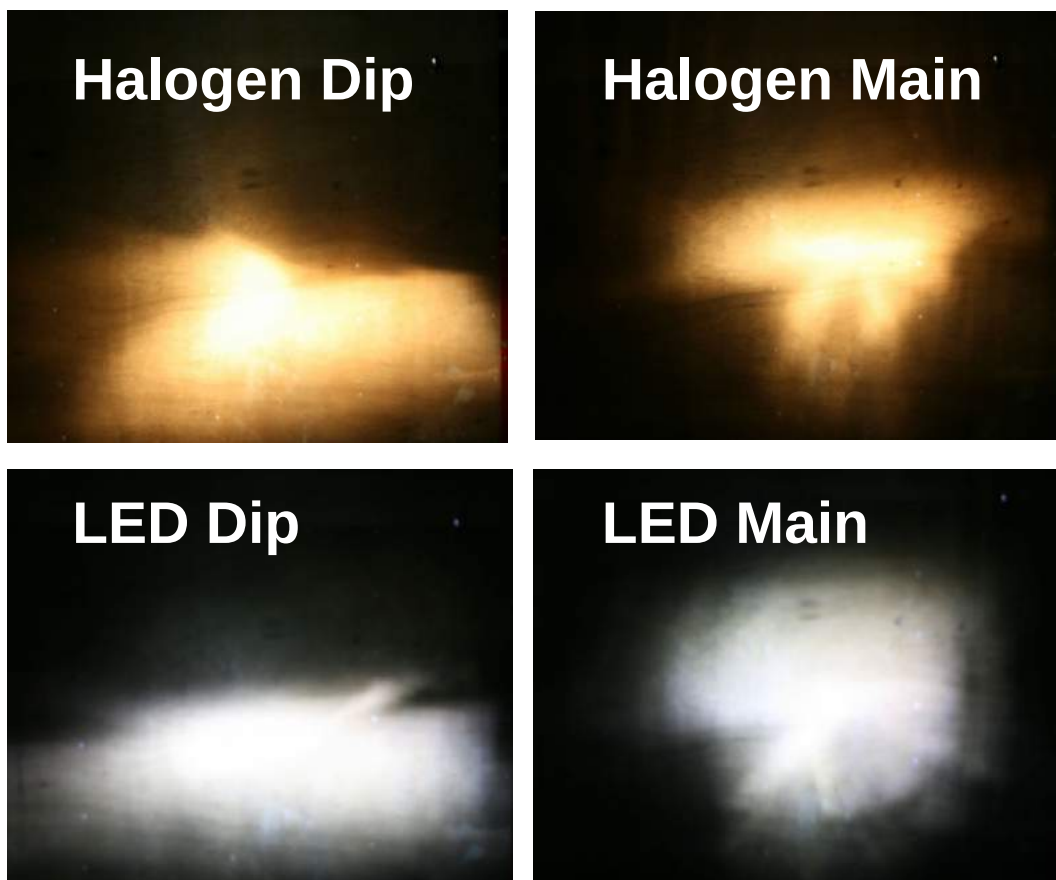


Illustration 4: Headlight bulb comparison. Fitted to Wipac Quadoptic reflector.

A very bright headlight indeed and no sign of the charging light once the engine is running. The bulb from Paul Goff is £34.95 and the total cost worked out at £60.62.

If you would like any further details please get in touch.

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