

Wiring Upgrade to Euro-style Headlamps

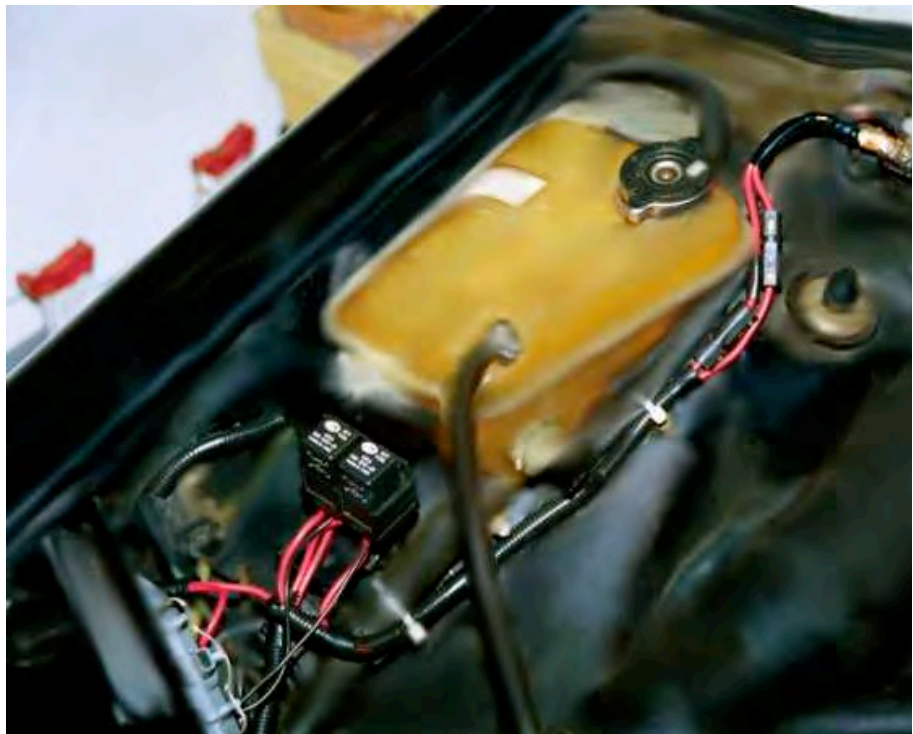
finished product, plus protects the wires from chafing.

- (c.) Copper lug. Two of these are needed, one for the power main, and the other for the main ground.
- (d.) In-line fuses. Two of these are needed to protect not only your headlights, but also the entire car's electrical system.
- (e.) Relay holder and snap in wire connectors. Holder shown is by Bosch, and you'll need two, accompanied by 8 of the wire connectors.
- (f.) 4 pole relay. These get plugged into the above relay holder; you'll need 2.
- (g.) High temperature bulb connector. Seen leaning up against the yellow box, these connectors accept the ground wire, plus the power supply for high and low beam filaments and can stand up to the massive heat you're about to be kicking out.
- (h.) Upgraded halogen H-4 bulbs. You'll need a pair of these also, example shown is a 100/130W.

Next, let's take a quick overview glance at the installation, and we'll then look at each step in greater detail. Starting in the upper right corner, you'll see a heat-shrink wrapped bundle of wires that terminate in a copper lug that is then bolted into one of the car's main power supply.

Following those wires down

you'll see the in-line fuses, with wires encased in ribbed plastic tubing as they travel down to the pair of relays in holders. In this installation, the mounting bracket for the radiator overflow tank provided a convenient location for mounting. In and around the relays is a tangle of wires that we'll look at in greater detail. Now for a closer look.



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In photo number 3 is a closer view of the power supply line created going into the in-line fuses. Just out of personal preference I staggered the placement of the in-line fuses. Why? The upper one is for the high beams, the lower one is for the lower beams. As you see, these power supply wires are encased in ribbed tubing as they leave the in-line fuses, continuing down past the overflow tank.



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The next photo is the most complicated, but the most interesting, and once you look at it for a moment, not that hard to figure out. Unfortunately, this was my first attempt at such an installation and I only had 1 color wire, so the wires aren't color-coded but we'll work past that. Following the wires as they come past the overflow tank, the following exists for each of the 2 relays:

- (a.) A #10 power supply in from the above power supply.
- (b.) A #10 power supply from the relay going to the headlights
- (c.) A skinny black wire from the headlight to the relay (tells it when to be on or off)
- (d.) Not seen, but another skinny wire which is the ground wire for the relay itself (remember, even switches need to be grounded).



Also, seen snaking up and behind the relays and the overflow tank is another ribbed tubing with 2 wires going into it. These are the #10 ground wires for the headlights. Remember: it does no good in wiring an electrical circuit to feed full power thru #10 wires to the bulb if the ground wire has less capacity to flow electricity.

Next, another plastic tubing is seen going from the relays to the lower left corner with 2 wires in it. This is the power supply for the high and low beams. Just out of sight is where I spliced in, then heat shrink wrapped, short 'pig-tail' sections of #10 wires for each. These two pig-tails went to power the passenger side lights, with the other wires continuing (encased in ribbed plastic tubing) down, underneath the radiator, then up and over to the driver side lamp assembly.

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The next photo is looking from the overflow tank toward the passenger side headlamp assembly. I drilled a hole through the plastic cover. Through that hole travel a



total of 5 wires: (a) three #10 wires (i.e. power supply for high beam & low beam, plus, a #10 wire for ground), and (b) two skinny black wires, one going to each of the 2 relays. You guessed it, these are the wires that cause the relays to activate/turn off.

After routing the wires through the plastic cover shown above, it's simply a matter of making the connections. Using the factory socket as your guide, it's very easy to match up your connections for high beam power, low beam power, and ground.

On the passenger side you need to fit the pair of skinny black wires with blue coated spade connectors. These spade connectors are then plugged into their respective positions on the factory original bulb connector for either high beam or low beam power. As such, when you turn your lights on and select either high or low beams, the electricity flows normally from the battery through the dash mounted light switch, the hi/lo beam selector stalk, and then on to the original bulb socket. Then, the electricity that used to flow either to the high or low beam filaments now flows through the black wires with spade connectors to the respective relay to turn power on to the high or low relay. Wired this way, if needed, you could easily unplug these spade connectors, disconnect the high temperature bulb connectors, and re-fit the factory bulb connectors, putting the system back to its original configuration.

Finish the job off with a massive supply of wire ties, and you will have appropriately over-engineered the system.