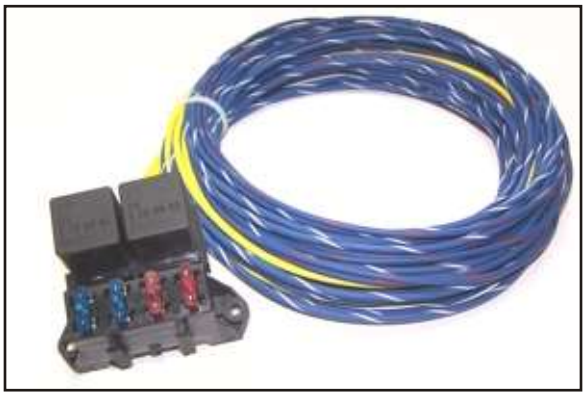
advance AUTO-WIRE

INSTALLATION INSTRUCTIONS FOR HEADLIGHT RELAY KIT



GENERAL DESCRIPTION

This "mini panel" is designed to provide power and control for up to 240 watts of high beams and 120 watts of flow beams, with each filament individually fused.

POWER SOURCE

It is recommended that the main power for this kit be taken directly from the battery connection at the starter solenoid. If your car is equipped with an ammeter, taking power here will cause the ammeter to read "charge" whenever power is drawn from this connection. This is unfortunate, but the only way around this problem is to take power directly from the alternator instead, which may be rather difficult to do.

INSTALLATION

Location: The fuse block/relays should be mounted in a well protected area, away from adverse weather conditions and possible mechanical damage, but should be readily accessible should the need to replace a fuse or a relay arise. The fuse block may be mounted to sheet metal using sheet metal screws, but if access to the back of the panel is accessible, nuts and bolts are preferred.

Try to select a location that minimizes the total length of the power wiring, that is, the total length of the heavy gauge blue/white, blue/red and the yellow main power wire should be as short as practical.

Wire Routing: As much as practical, try to mount the wiring along the same path as existing factory wiring. Where this is not practical, make sure the wiring is well supported by the use of cable ties, etc, and routed out of the way of any possible mechanical abrasion. The wire must be routed and mounted such that no movement of the wire is allowed.

TERMINATION

A small selection of terminals is supplied with each kit, but, depending on the type of lights you buy and the switches you select, you may need to purchase other terminals to complete the job. It is recommended that you use non-insulated terminals, crimp and solder each, and then cover with heat shrink tubing.

Bullet/sleeve connectors: Vintage British cars typically use bullet/sleeve connectors, and we supply both the bullets and sleeves as needed for this kit. If you prefer, you may use other connector types, available locally at your electrical supply shop or auto parts store.

There are two types of bullets available - those that are intended to be soldered, and those that may be soldered ***or*** crimped. I recommend using the latter type (supplied), and soldering them, rather than buying the solder only type. They just work better. When you solder, use a small diameter low temperature, 60/40 rosin core solder, such as sold by Radio Shack. ***Do not*** use acid core solder!

When soldering these bullets onto the wire, strip just enough of the wire so that the insulation is just inside the bullet when the tip of the wire is fully inserted. Hold the soldering gun next to the bullet while you try to feed the solder into the hole in the end of

By Dan Masters dmp

the bullet. As soon as the bullet is hot enough, the solder will start to flow and will be drawn into the bullet. Feed just enough solder to fill the bullet, but try not to feed enough that it wicks up the wire very far. A little bit of experimentation will show you just how much solder to feed. It's actually very easy once you get the hang of it. See **photo 1**.

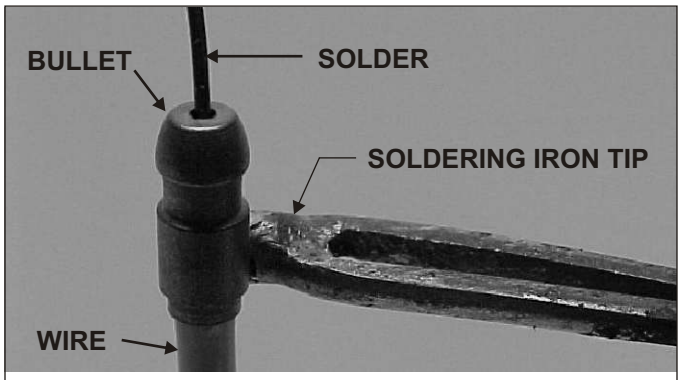


Photo 1: *Proper technique for soldering bullet connectors*

There is another option for installing bullet connectors, and that is to use a special crimping tool sold by British Wiring, just for bullets. It's a bit pricey, at around $50.00, but it is ***NICE!*** I have one, and I will never solder bullets again. See **photo 2**.

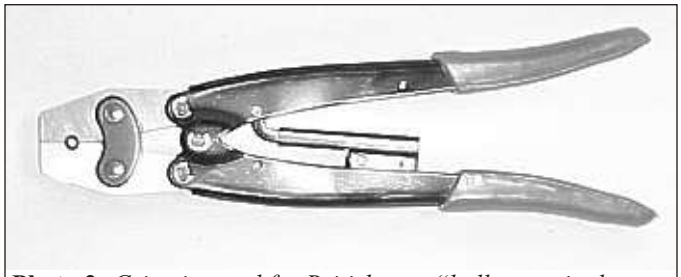


Photo 2: *Crimping tool for British type "bullet terminals.*

Headlight wiring: For maximum headlight brightness, you should eliminate ***ALL*** connections between the headlight relays and the headlight sockets. It takes a very small drop in voltage, as from connectors, etc, to reduce the brightness of the headlamps a noticeable degree. Run the headlight wires directly into the headlight buckets, cover the wires with protective sleeving as they pass through holes in the buckets and the fenders to prevent abrasion, and crimp ***AND*** solder the wires to the socket terminals.

Standard crimping tools won't work here, nor will simply soldering the wires. If you don't have the correct crimping tool, it will be necessary to "crimp" the terminals onto the wire using a small pair of pliers (duckbill pliers work best), and then solder them. Crimping alone isn't adequate with the pliers, so it is mandatory that you also solder. When terminating a wire, it is recommended that you use one of the crimps around the wire, and the other crimp around the insulation (as shown in **photo 3**). When you are terminating two wires, you won't be able to fit the insulation of both wires under the crimp, so it will be necessary to strip both wires a bit longer, and use both crimps to hold the bare wires.

After you have soldered and crimped the wires in place, insert the terminals into the backs of the connectors, firmly pushing until you hear the retaining clips click in place. If you should ever need to remove the wiring for some reason, you will have to either cut the wires just short of the sockets and replace the sockets when you're finished, or remove the terminals from the sockets as described below. Leave enough slack in the wires to allow for this. Wiring the headlight sockets as shown in **figure 1**. To remove the wires from the headlight socket (or any similar sockets), just insert a small blade screwdriver or other sharp object into the socket to press the retaining clip down as shown in **photo 4**. Once the retaining clip is depressed, the terminal will slip out without any problem. When you re-insert the terminal, make sure the retaining clip has sprung back to its full retaining position. You may have to lightly pry the clip up before inserting to make sure it will hold properly in the socket.

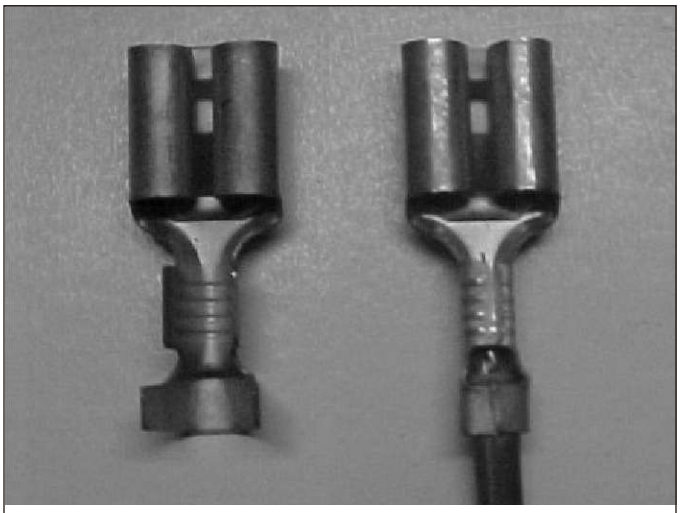


Photo 3: *Crimp the wiring/terminals using a pair of pliers. The lower crimp should be over the insulation and the upper crimp over the bare wires only.*

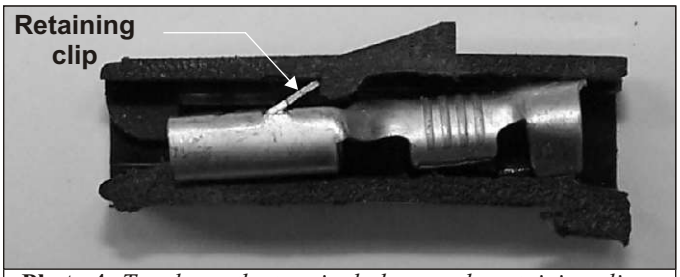


Photo 4: *To release the terminal, depress the retaining clip and pull the terminal out from the wire end.*

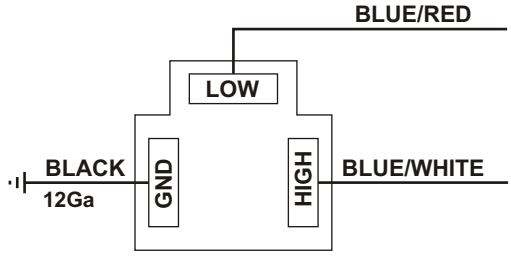
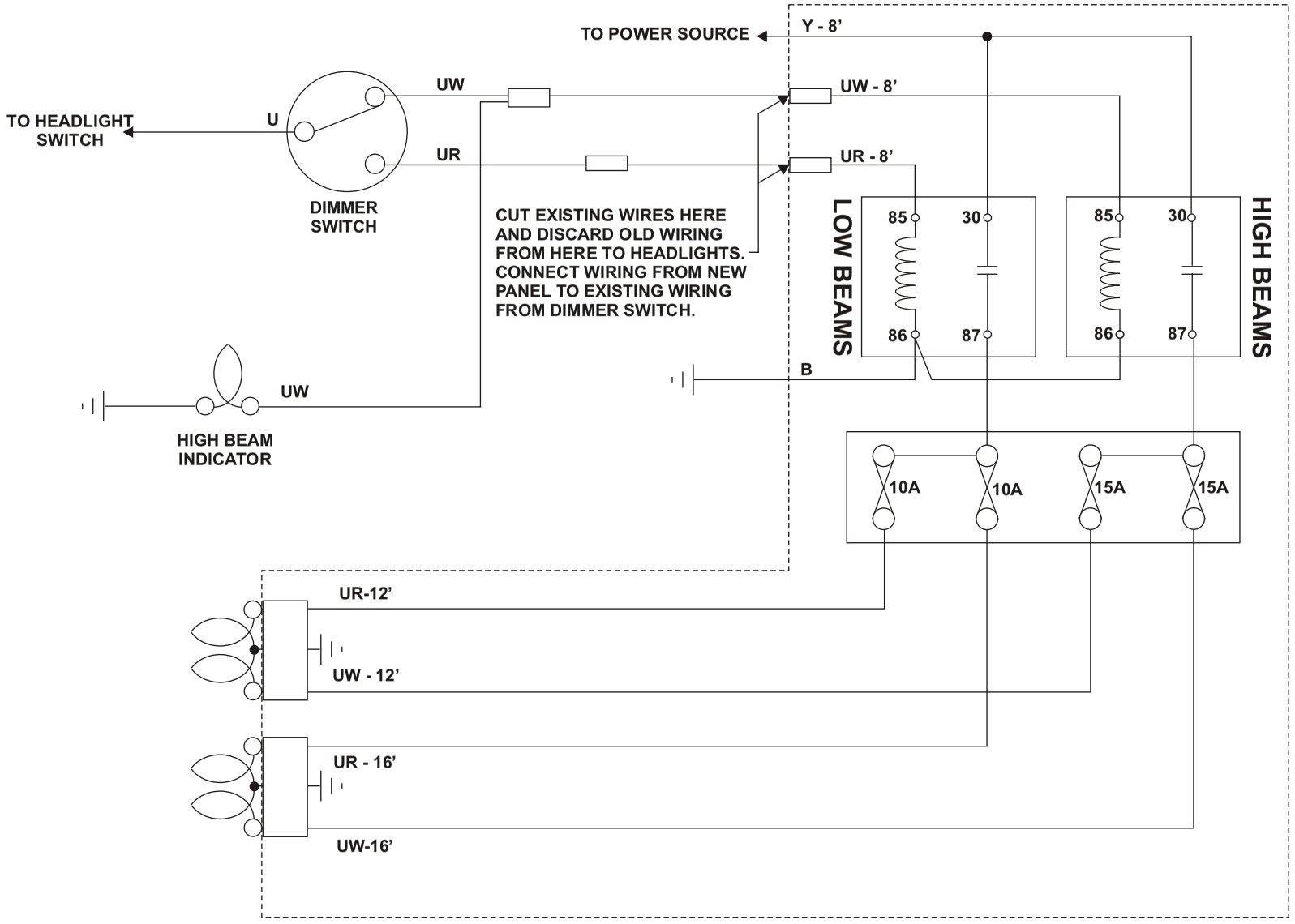


FIGURE 1: HEADLIGHT SOCKET WIRING DETAIL (wiring shown from the wire side)



ITEMS INSIDE DOTTED LINE ARE SUPPLIED AS PART OF THE KIT.
ITEMS OUTSIDE THE DOTTED LINE ARE OWNER SUPPLIED

HEADLIGHT RELAY KIT