



Relay & Wiring Kit, Headlights

Supplemental Information & Installation Instructions

Suitable for All British Cars, Especially Beneficial for Vehicles with Halogen or other High-Output Headlights

PART# 117-515

MOSS MOTORS, LTD.

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Tools required:

- Wire cutters
- Drill and screwdriver
- Socket set
- Connector Crimping tool

Why do I need a relay kit?

The headlights in our cars are wired directly, meaning all the electric current powering the lights goes through the lighting switch and a relatively long run of wiring. This is significant because the headlights make up one of the highest loads in the entire electrical system. The voltage drop through the wires and switch is significant, and the headlights are not as bright as they could be as a result. Modern cars use relays in the headlight circuit to minimize the voltage drop. Any British car can benefit from adding headlamp relays. The headlights will be significantly brighter, and the useful life of the lighting switch will be extended considerably. Relays are especially beneficial (and strongly recommended) if you have fitted halogen headlamps, which typically have a 60W high beam and a 55W low beam. This is a significant increase over the stock sealed beams that are generally 50W high beam and 40W low beam. According to Rick Astley, author of MGB Electrical Systems, after fitting halogen headlights, "the current drawn from the two headlamps rises by 20% and heating in the switches by 44%. On the MGB tested, lamp brightness loss due to voltage drop decreased from 38% to 9% by simply adding relays. By using both relays and halogen headlamps brightness more than doubled over the conventional system."

This is a universal kit - there are many ways to install the relays and run the wires. Our instructions outline one way to do the installation.

Instructions

1. **DISCONNECT THE BATTERY BEFORE WORKING ON THE ELECTRICAL SYSTEM.** Figure 1.



Figure 1

2. Choose a location to install the relays in the engine compartment, making sure the wires are long enough to reach the existing headlight wiring harness.
3. Remove the actual relays from the assembly. Use the holes in the mounting tabs of the plastic relay holders as a guide to mark the hole locations for the mounting screws.
4. Drill the holes and use the screws included in the kit to fasten the relay holders into place. Once the relay holders are secure, reinstall the relays.

Installation Instructions

- Now it is time to hook up the wiring. The ground wire can be soldered to an existing ground wire, or secured to the chassis at an existing harness ground using the supplied ring terminal. Many vehicles have a ground connection for the horn button on the top side of the steering rack. Figure 5.



Figure 5

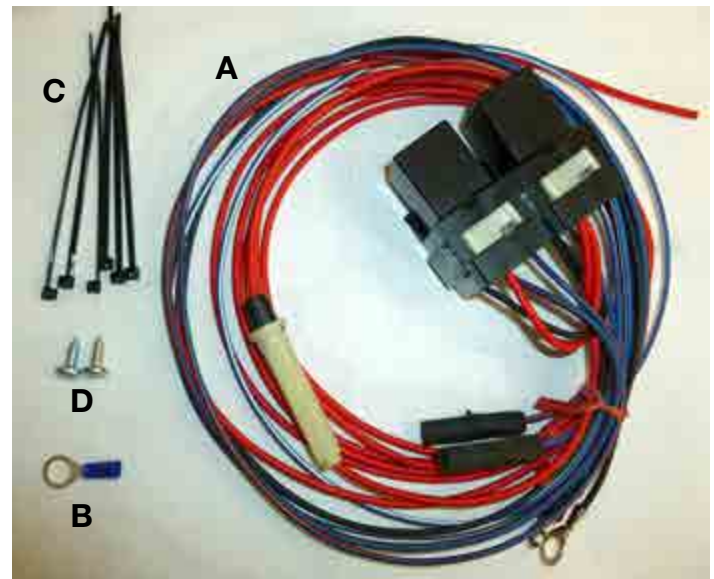
- The blue/white and blue/red wires (from the relays with the female bullet connectors) are connected to the regular wiring (of the same color) in the harness. (Blue/white from the relay to blue/white in the harness. Blue/red from the relay to blue/red in the harness.) Note: this kit was designed for classic British cars. Some of those have a light switch, and then a foot operated dimmer switch. (Also called a dipper switch.) Then some of these cars have the dimmer switch built into the headlight switch. We see this more on cars with their headlight switch on the steering column. The larger blue/white wire from one relay, goes to the high beams. The larger blue/red wire from the other relay goes to the low beams. Figure 6.



Figure 6

Note: The original wires going to the low beams and to the high beams each split so they can feed both sides of the car. You need to connect the wires from the relays with the male bullet connectors upstream from that split. If you don't, only one side of the car will light.

- The long red wire is for the power to the headlamps. We suggest wiring this to the starter solenoid using the supplied ring terminal. This will provide direct battery power to the headlamps when they are turned on. When you have found your power source, cut the wire to length and crimp or solder on the appropriate connector.
- Confirm that all your connections are secure and sealed. There should be no exposed connectors.
- Re-connect the battery and test the headlamps. There will be a small click from the activating relay when you switch on the lights. If everything works correctly, proceed to the next step.
- Clean up the wiring using the supplied cable ties or electrical tape.
- Get out and enjoy your British Sports Car without worrying about staying out until dark- enjoy your newfound freedom from the Prince of Darkness!



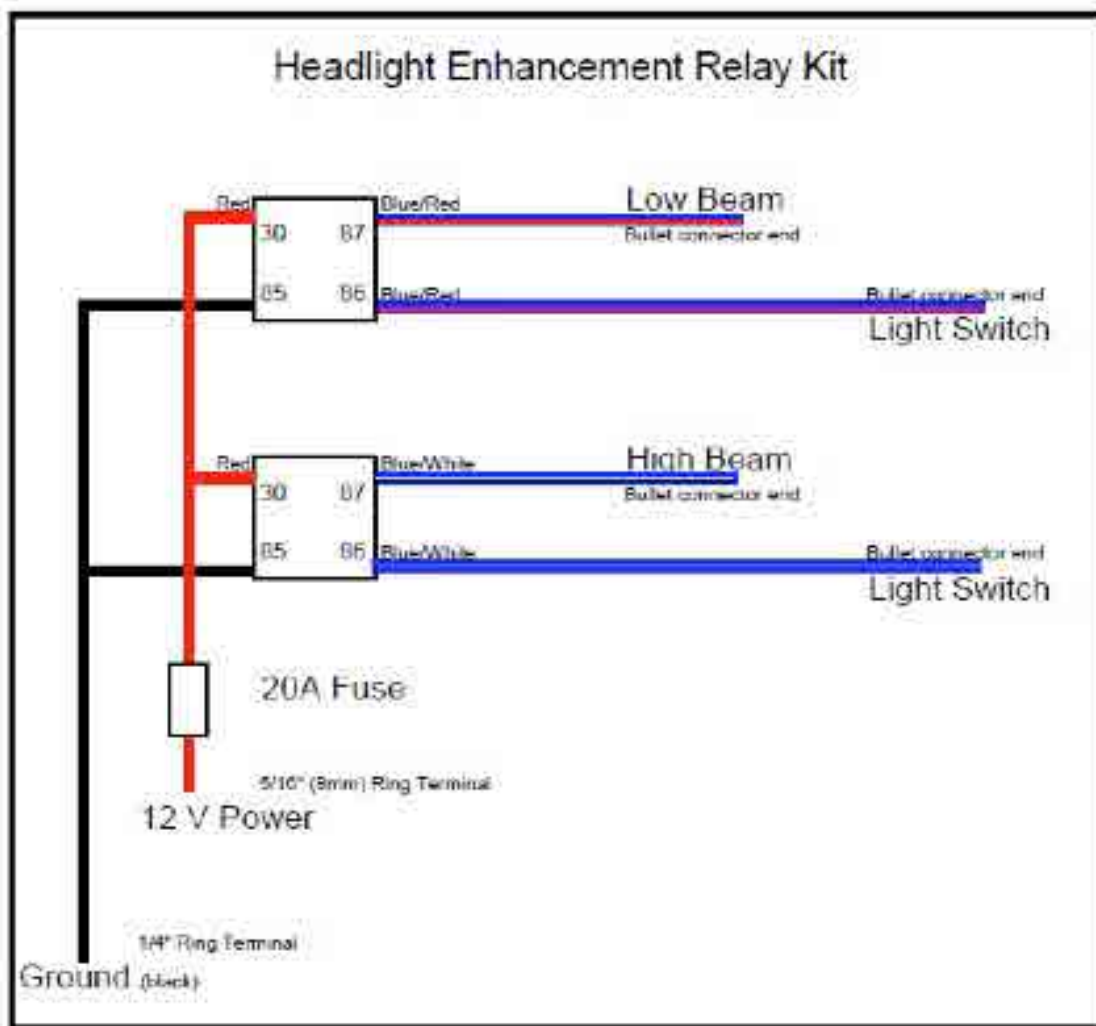
117-515 Bill of Materials			
Ref	Part#	Description	Qty
A	117-516	Relays with wire, Raw	1
B	772-852	Ring Terminal, 5/16"	1
C	051-016	Cable Tie, 4"	6
D	323-705	Screw, 10 x 1/2"	2

Does your headlight switch get hot?
Are your headlights as bright as they could be?

This kit:

- Adds a fuse to the headlamp wiring
- Reduces switch temperature by up to 44%
- Reduce the loss of headlamp brightness due to voltage drop from 38% to 9%.*

* Rick Astley, MGB Electrical Systems



Although every effort has been made to ensure the accuracy and clarity of this information, any suggestions that you may have that will improve the information (especially detailed installation notes and photos) are welcome. These instructions were developed and written by Moss Technical Support. If you have any questions or difficulties with your installation of this product, telephone 800-667-7872 between 7:00 a.m. and 4:00 p.m., Pacific Time for assistance.

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