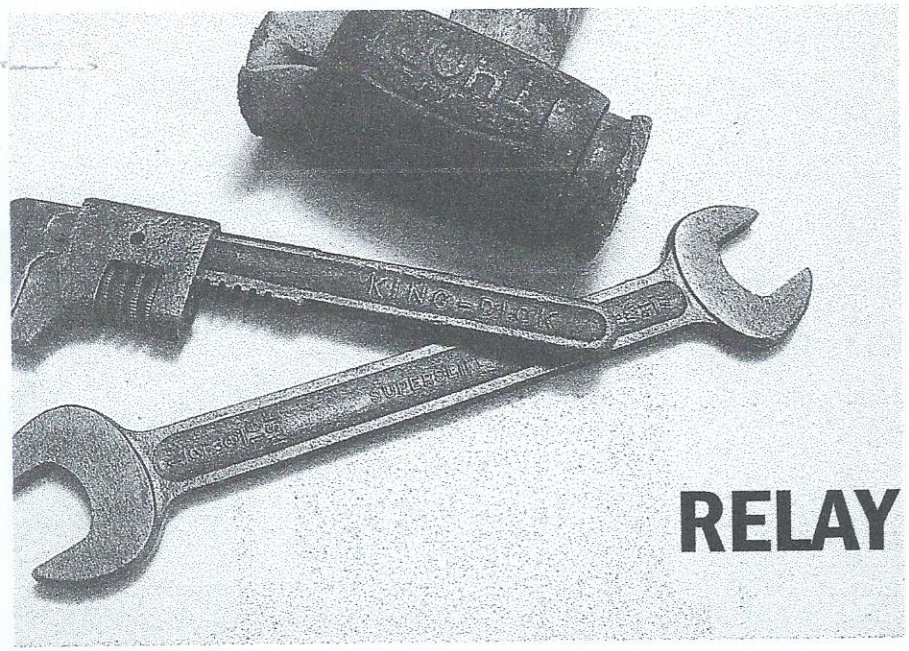


Jean Caron
Winnipeg, Manitoba
Austin-Healey Club of Manitoba

RELAY BOX REBUILD

This past summer I experienced some problems with the relay box in my Austin-Healey, so I looked through my collection of technical articles and found one that described in details the rebuilding of the relay box. It was written by Jim Albeck from California, published in the *Chatter* magazine of December 1995. However, since I am not overly gifted when it comes to figuring out where a given wire from the base plate attaches to a terminal on one of the relays, I attempted to contact Jim; sadly, he had passed away a week before.

This article is basically a repeat of Jim's article with the exception of the drawn schematic which shows all the numbered terminals for each relay and which wires attach to each of them. I got this information from a couple of electrical techies at my former workplace.

Getting the box out the car requires the aid of a nutholder in the wheelwell. Remember to mark the wires one through eight when removing them as it will aid in the reassembly. With the box out of the car and on the bench, you can now start disassembly.

1. Remove the cover, and clean out the dust, dirt, rust and caterpillar cocoons so you can see what you are doing.

2. Drill out the ten rivets from the bottom side and remove all parts. Do not throw anything away until the job is complete.

3. There are three insulators, one on the bottom side and two on the top side. There are also six insulating washers (small) that are in the metal base plate between the insulators. Save these pieces as they will be reused. See figure #1.

4. The four contact pieces (where the wires from the loom attach) that are designated 1, 2, 5 and 6, are cut off so they are flush with the top insulator when assembled. The insulator acts as a locator for these pieces so they do not short the base plate. The four straight contact pieces that go to 3, 4, 7 and 8 have locating pins that interface with the bottom insulator. The pins are inboard on 3 and 7 and outboard on 4 and 8.

5. With everything removed, clean the cover, base plate and contact pieces as they will be dirty and rusty. Paint the cover and base plate the color of

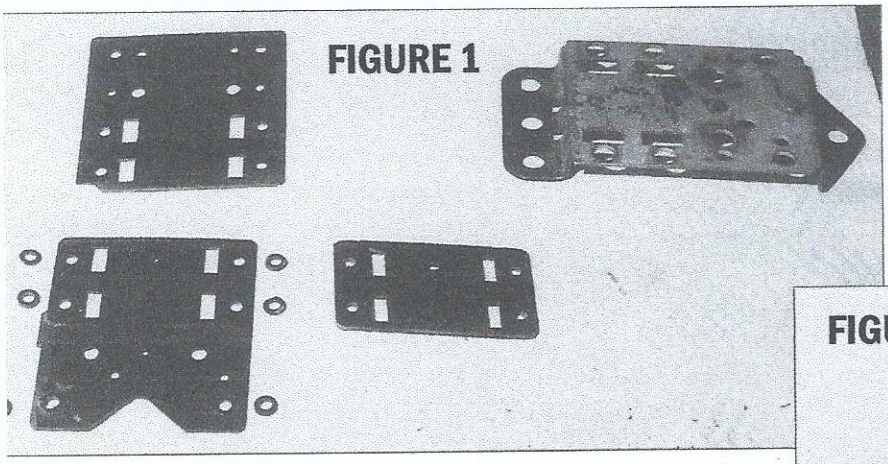


FIGURE 1

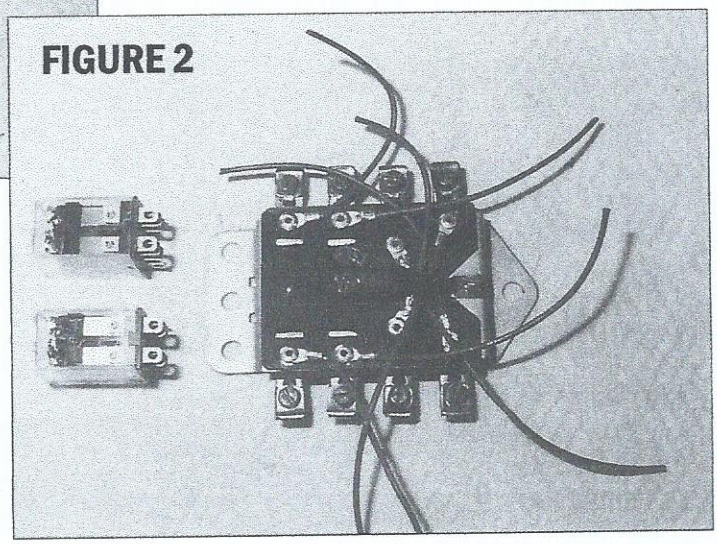


FIGURE 2

your choice (I had mine cadmium-plated).

6. Items you will need from your local electronics supply store:

a. Two relays: 12 VDC, with double pole double throw (DPDT) contacts. Take your base plate and cover with you as size is important if you want the cover to fit on the finished item.

b. Eight rivets: I used ⅛-inch diameter pop rivets. Check the length of the rivet as it has to go through the contact piece, insulators, base plate and the wire terminal.

c. Four feet of 18 gauge stranded wire; 20 gauge can be used.

d. Eight ⅛-inch ID wire terminals. Get some extras in case you screw up (they usually come in bag of 20).

7. If your terminals are insulated, remove the insulation to facilitate installation. Now is the time to prewire your terminals.

8. Replace the insulators (I used contact adhesive to hold them in place) and do not forget to replace the six round washers that go in the larger holes in the base plate.

9. Locate where the relays will be placed, but do not glue them in place yet.

10. Before actually attaching the relays, assemble the wires and contact pieces to the insulated base plate. I did a trial assembly to see if everything fit before I actually riveted everything in place. I recommend you do the same as you may not have identical relays. See figure #2.

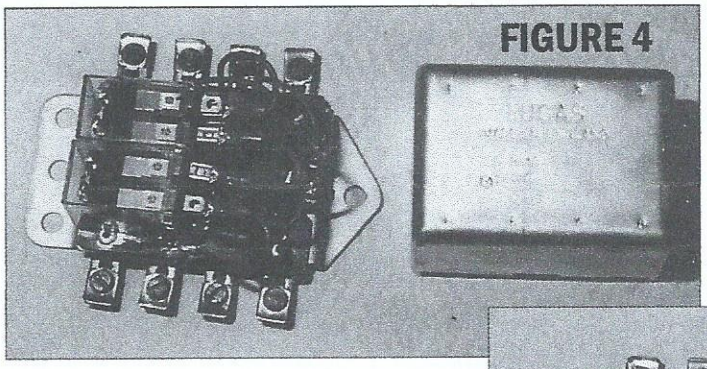


FIGURE 4

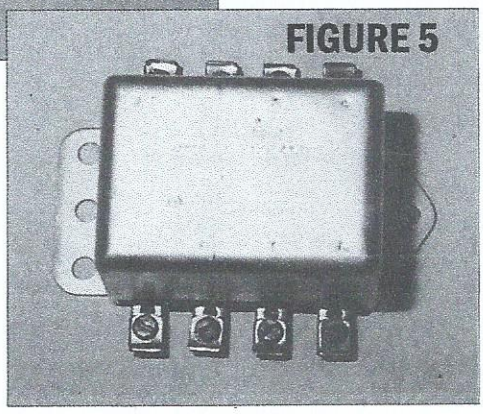
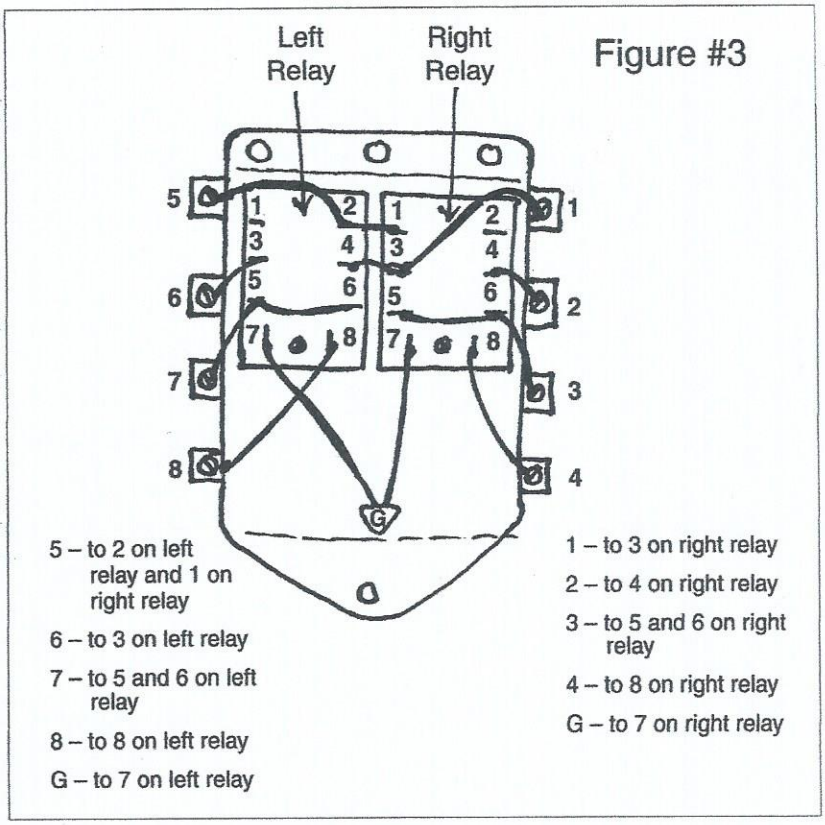


FIGURE 5

11. Attach the relays to the base plate.

12. Check all leads with an ohmmeter to see if you have continuity between the free end of the wire and the contact piece. Resistance should be less than 0.4 ohms. Also check each lead to the base plate to make sure you do not have a short to ground.



13. Wire the relays as per schematic; see figure #3. The end product should look like figure #4.

14. With a volt/ohmmeter you can now check to see if you wired it correctly:

a. You should have continuity from contact 5 to contacts 3 and 7 (brake light circuit).

b. With clip-leads, connect the base plate to ground and contact 4 to a 12-volt power source. The relay should energize and you should have continuity from contact 1 to contacts 2 and 3.

c. With the same setup as (b), connect the 12-volt source to contact 8. You should now have continuity from contact 1 to contacts 6 and 7.

15. Replace the cover (see figure 5) and install in your Austin-Healey, ensuring that the base plate is grounded.

16. With all the wires attached, let's check out the system:

a. Switching the trafficator, you should be able to hear the relays energizing; if not, you are not getting power through the trafficator to contact 4 or 8.

b. If the relays are operating but the lights do not flash, check to see if you have 12 volts at the flasher (terminal B). If you do, short out the flasher terminals B and L and operate the trafficator. The lights should illuminate but not flash, and this means ordering a new flasher unit.