

INSTALLATION INSTRUCTIONS 84-87 HEADLIGHT MOTOR UPGRADE KIT

Thanks for ordering your upgrade kit, please read through these steps to get a feel for what's going on and how really simple the installation is!

1. **Raise** the hood and make sure the hood lock is firmly engaged.
2. **Remove** negative (-) battery cable from the battery. This is one time when this really needs to be done. Working around the older headlight motors can make the motor run unexpectedly, sometimes to the detriment of your fingers.
3. **Disconnect** the headlight motor wire connectors, follow the green, white, and gray colored ribbon wire from the headlight motors (LH & RH), around the headlight "horseshoe" bracket to where it connects to the car harness. (Gray colored connector)
4. **Remove** the small metal wire retainer clip on the horseshoe that routes the headlight motor wire and the headlamp bulb wire. **Remove** the headlight motor wire, (green, white, and gray ribbon) wire from the channels around the horseshoe so that they are free from the assembly. **Reinstall** the wire retainer clip to secure the headlamp bulb wire. The new headlight motor wires will be routed another way.
5. **Rotate** each headlamp assembly 1/2 of the way toward open using the manual turn up knob (white), at the rear of the headlight motor. You may want to put some masking tape/paper in the area around the headlight door opening on the hood and around the headlight door support, **Fig. 8B-9**.
6. **Remove** the two screws on each side and the two screws in the front of the headlight bezels, **remove** the headlamp bezels from the headlamp assemblies, **Fig. 8B-9-2**.
7. **Rotate** the headlamps to the 3/4 open position. **Familiarize** yourself with the area inside the headlight assemblies now that the bezels are off. Using a flashlight, look where you think the headlight motor output shaft should come inside the headlight assembly. You will see a 13mm hex nut. Spray this nut with WD-40 or equal.

The objective here is to use 1/4" drive extensions on your ratchet to reach the hex nut from the opposite side of the headlight assembly, in this way you eliminate having to remove the entire headlight assembly from the car.

8. **THIS IS VERY IMPORTANT:** When **removing and installing** this hex nut, any pressure you exert on the nut can be transmitted directly to the headlight motor gear train, damage to the

gear train will occur if you do not **hold the headlight assembly securely** and do not allow it to turn and jam on the headlight motor shaft. (FYI: Inside the headlight assembly bucket is a dowel shaft that locks the headlight motor shaft from turning in the headlight bucket assembly, so holding the assembly securely will prevent any damage) **REMOVE THIS HEX NUT (LH and RH).**

9. **Remove** the (3) 10mm motor mount hex bolts and the (1) nut and nut / bolt, attaching the **hood hinge bracket, Fig 2D-7 Hood Assembly Component, view F**, that holds the headlight motor to the hood. Once the headlight motors are removed you can reinstall this nut and nut / bolt, on the **hood hinge bracket** and tighten down.

10. **Remove** the headlight motor by twisting gently back and forth while pulling the motor assembly free from the headlight assembly. **The headlight assembly will be hanging only by the pivot shaft opposite the headlight motors, avoid putting any pressure on the headlight bucket assembly until the new motors are installed.**

11. **Install** one of the 10mm bolts back into the center headlight motor mounting hole position, only screw down to within approximately $\frac{1}{4}$ " from bottom at this time. **See Fig. 2D-6 Horseshoe Support.**

12. Hold the correct side, (LH or RH) motor up into position on the headlight assembly you're working on and using the manual turn up wheel (black), on the back of the motor, line up the motor output shaft and solid roll pin with the hole and slot on the headlight bucket assembly, turn the wheel on the motor to do this.

13. Slide the motor shaft all the way into the headlight assembly slot and at the same time ease the headlight mounting bracket (open slot) under that 10mm nut you just installed. With your flashlight, looking inside the headlight assembly, you should be able to see the threads on the end of the headlight motor shaft protruding from the headlight bucket assembly.

14. Install the new allen head cap screw in the upper motor mount hole and **leave loose** for now.

15. **Reminder**, protect your painted surfaces on the hood and headlight assemblies. Install the 13mm hex nut on the headlight motor output shaft using your extension ratchet, please remember to firmly hold the headlight assembly so that no pressure is put on the gear train of the headlight motor. These are locking nuts so tight (**not** Gorilla tight) is all you need. In this way there is no doubt that the headlight motor shaft is properly seated in the headlight bucket and will not bind.

16. Rotate the headlight assembly, using the manual turn up wheel at the end of the headlight motor, to the almost closed position, adjust your clearances around the headlight assembly lid by moving the new headlight motor and snug up the hex head and the allen head bolts. **An allen wrench has been provided for the allen head motor mount bolt.** If further adjustment is needed see **Fig. 8B-9** for nut and bolt locations to move the headlight support assembly. Please manually raise and lower the headlight assemblies to make sure you have proper clearance around the headlight lid. Tighten these motor mount bolts and support bolts/nuts if loosened.

17. Manually move the headlight assembly to the 3/4 open position and reinstall the headlight bezel, manually rotate the headlight assembly up and down to check clearances.

18. Locate the relay cover on the left front wheel house, **Fig. 8A-34 Headlamp Door Actuator Relays**. At this point you may want to put on some disposable gloves, the black dielectric grease that GM used on these relay connectors is a mess. Remove this cover it to expose the infamous 3 relays and a cluster of wires.

19. Remove the metal bracket that the 3 relays are mounted on and push each relay up and out of their holding slots, **Fig. 8A-34 Headlamp Door Actuator Relays**.

20. **Unplug all the relays** (the isolation relay only, has a one piece connector and only 4 wires going to it), the wire we want is the yellow wire that is in the "A" position on this relay connector. This will be our trigger wire to operate the headlight module, mark this wire with a piece of masking tape for now.

21. The main power harness is already plugged into the new headlight module. Unplug this wire harness, attach the **red** wire, (power), to the **red** (positive) stud on the alternator. Attach the **black** wire, (ground) to either the longer stud on the exhaust manifold securing with the nut provided, **See Color Picture A**, or to the threaded hole that is in the alternator above the positive stud using the provided black oxidized bolt, **See Color Picture B**. We have provided both options for connecting the **black** wire, (ground) for the wiring harness. Decide which one you would like to use. Put the connector end of this harness down in the LH front wheel house cavity where the 3-relays were. **See Color Pictures A and B**.

22. Use the running splice, blue connector, provided, to attach the **brown** wire from the module main harness to the yellow, trigger wire, we identified in # 20. **See Color Picture C**.

23. Find the top relay bracket mounting hole in the LH front inside wheel house. Drill this top hole out to 5/16", drill shallow there are wires on the other side. You may have to turn the front wheel to the left so that you can drill from inside the wheel house.

24. Align the template provided with the top hole you just drilled using a bolt or pencil to hold in place and align the hole on the template marked "**B**" with the bottom hole that was used for the relay bracket, push one of the relay bracket bolts thru the paper template and into this hole. **See Color Picture D.**

25. Using some masking tape, secure the template to the wheel house. Now drill a 1/8" hole where the "**M**" is marked on the template, do not drill deep there are wires right on the other side to consider. Remove the template and drill this hole out to 5/16".

26. Route the main wiring harness as shown in **Color Pictures A, B and C** and secure with cable ties provided, keep in mind that the headlight assemblies are rotating in these areas so make these new wires secure. Plug this connector into the loose headlight module.

27. Route the headlight motor wire harnesses as shown in **Color Pictures E and F** for the RH and **Color Picture G** for the LH, use the cable ties provided and the wire clamps provided to make the harnesses secure.

28. Plug the headlight motor wiring harness connector into the headlight module, make sure the headlight motor wiring harness connector and the main power harness connector are locked into the module.

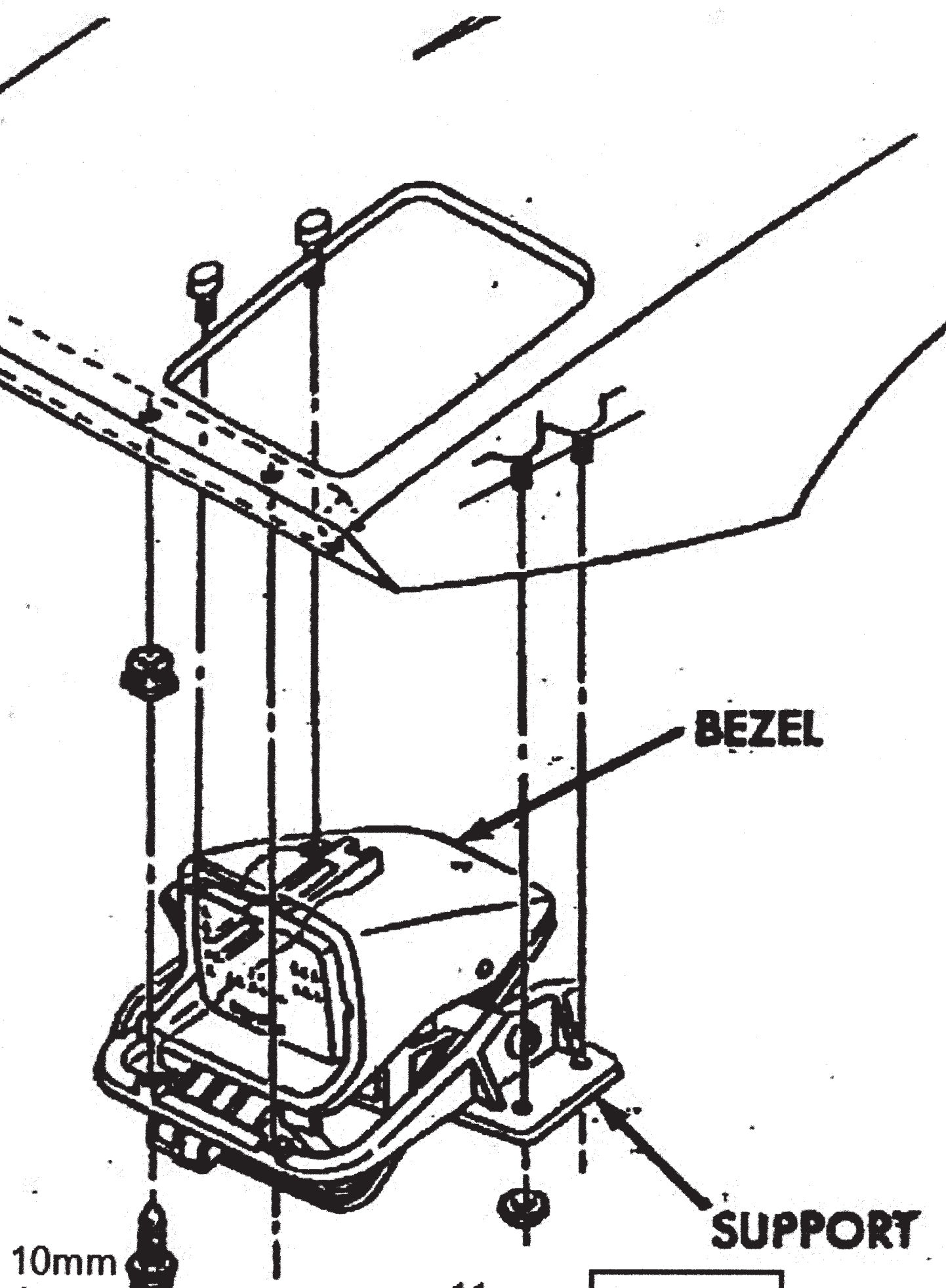
29. Mount the new headlight module on the outside of the wheel well by pushing the christmas tree plastic fasteners (provided) thru from inside the wheel well and into the two holes on the module. **See Color Picture C.**

30. PLEASE TAKE NOTE, MAKE SURE EVERYTHING IS SECURE AND OUT OF THE WAY OF THE HEADLIGHTS ROTATING, WHEN THE NEGATIVE CABLE IS CONNECTED THE NEW HEADLIGHT MODULE MAY TRY TO GO THRU AN "OPEN AND CLOSE" CYCLE SO BEWARE.

31. You're almost done, congrats!

32. Connect the negative battery cable and pull the headlight switch to the on position. It may take an "on" and "off" cycle to orient the headlight opening and closing, but there is no adjustment needed for a starting position.

GOOD JOB! ENJOY!



BEZEL

SUPPORT

10mm

11mm

Fig. 8B-9

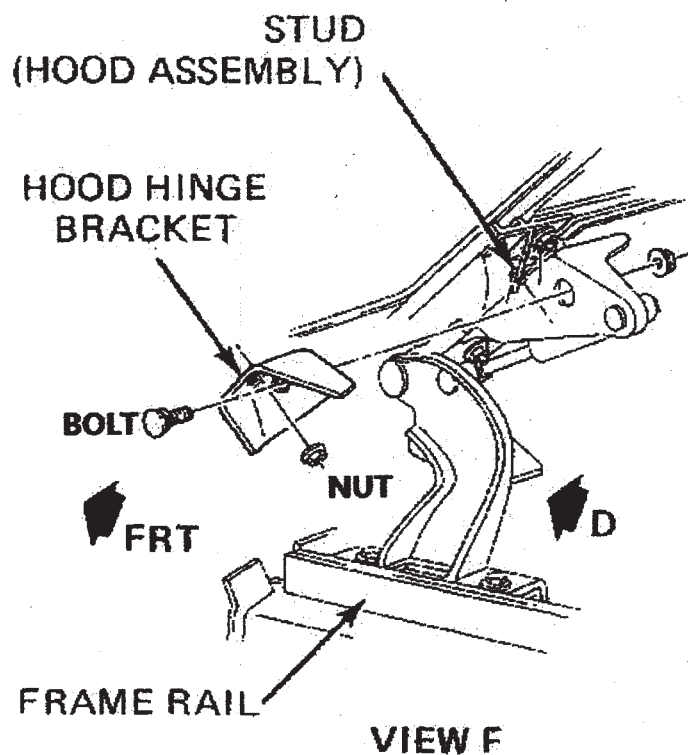
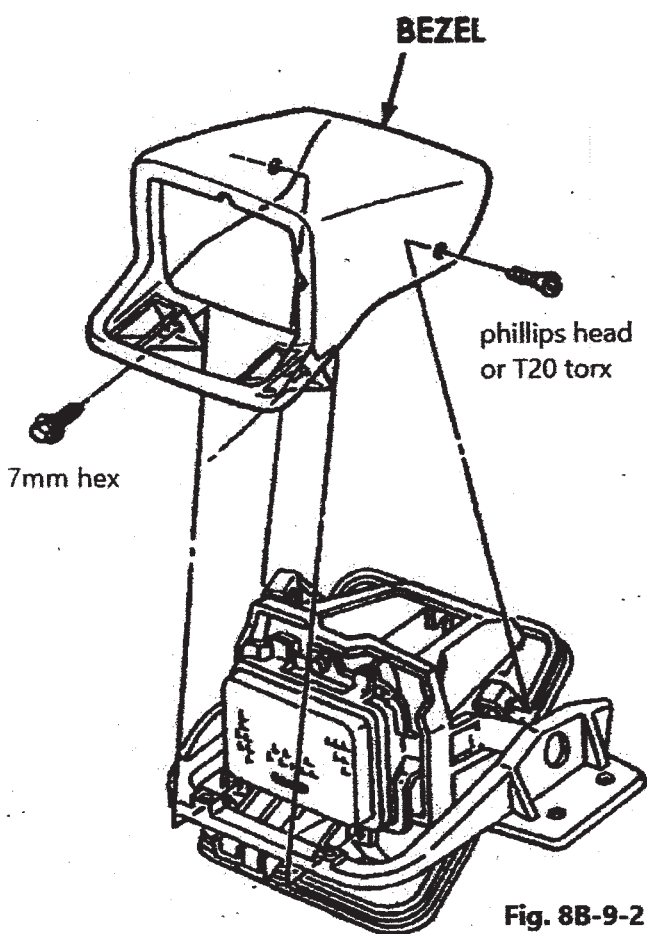


Fig. 2D-7 Hood Assembly Component

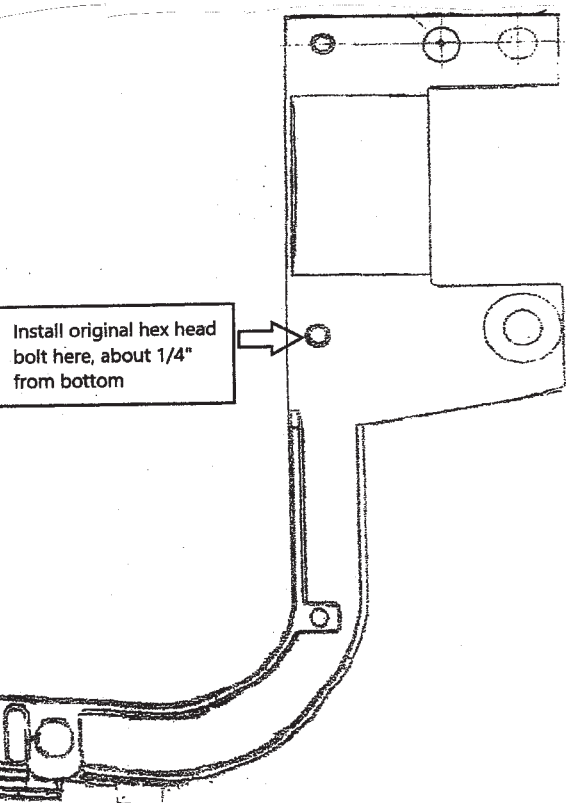


Fig. 2D-6 LH Horseshoe support

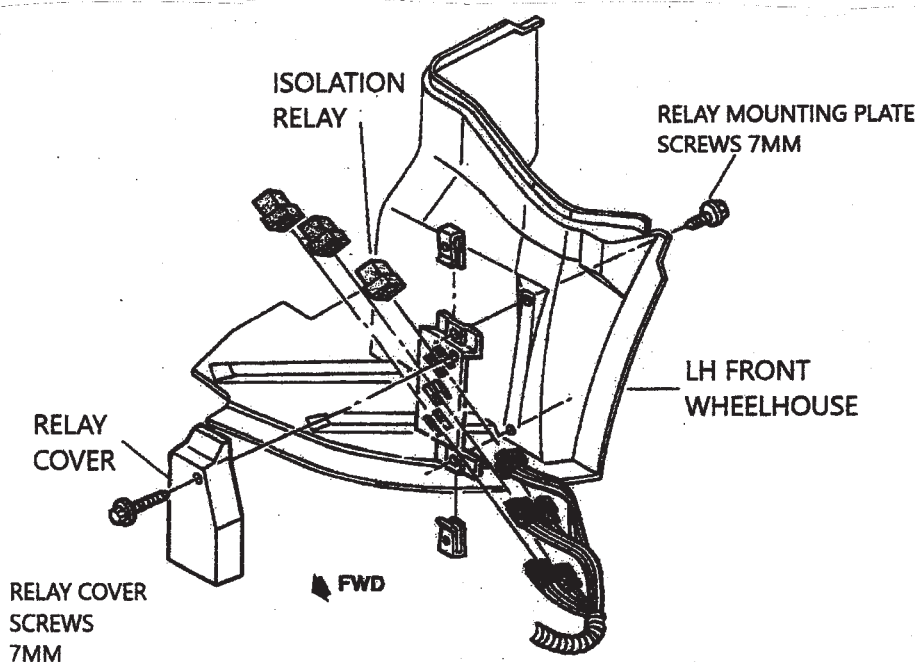
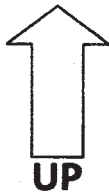


Fig. 8A-34 Headlamp Door Actuator Relays



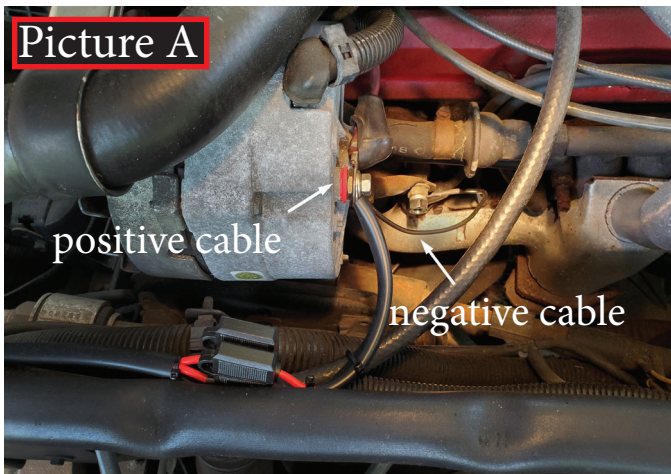
**TOP RELAY BRACKET HOLE – DRILL OUT
TO 5/16"**

**"M" DRILL 1/8" HOLE HERE
DRILL SHALLOW, REMOVE
TEMPLATE, DRILL OUT TO
5/16"**



**"B" BOTTOM HOLE FOR RELAY BRACKET
PUT BRACKET SCREW IN HERE TO ALIGN**





1984 - 1987 Corvette Headlight Motor Upgrade Kit

