INSTALLATION STEPS 68-82 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. **REMOVE** the hood and the two turn signal/front grills, 68-79; refer to drawings for your year Vette. **NOTE:** on 80-82 no need to remove grills, you will be accessing the headlight door springs and linkages from underneath the front bumper area, **CAUTION;** when using a floor jack, please use jack stands for safety.

2. **REMOVE** both vacuum lines on each headlight vacuum canister, manually raise both headlight assemblies and lock in place by pushing the actuator link toward the back of the car, see Drawing #1.

3. **REMOVE** the small vacuum hose (white stripe) that goes to the vacuum relay(s) located in the center under the front nose of the car, plug with the solid rivet provided.

4. **REMOVE** the 4 springs on each headlight actuator assembly. Drawing #1, items 6 and 7

5. **REMOVE** the cotter pin on the pin shaft that holds the rod end clevis in the actuator assembly and slide it out, paying attention to the plastic bushings and washers, this rod and rod end will be reinstalled later, Drawing #2, item 6

6. **REMOVE** the 4 nuts on each vacuum canister and remove the vacuum canisters.

7. **INSTALL** the 5/16" bolts and speed nuts (provided) to secure the outboard brace rod back to the actuator assembly housings, one on each assembly, Drawing # 1, item 4

8. **REMOVE** the rod end clevis from the vacuum canister push rod, these will probably be stuck, vise grips on the rod and crescent wrench will take care of this.

9. **REINSTALL** the rod end clevises back in the headlight actuator link on the small pin shaft and cotter pins, making sure all the plastic bushings, and are back where they started out, Drawing #2, items 4,5,13,12

10. You will notice that this rod end and pin shaft fits into curved slots on the actuator link, **INSTALL** the 5/16" x 1 3/4" bolt and speed nut (provided) in the forward area of the slot, **DO NOT TIGHTEN, THESE ARE FLOATERS THAT WILL ONLY LIMIT THE MOVEMENT OF THE ORIGINAL ROD END IN THE SLOTTED AREA.**

Reattach springs Drawing #1, items 6 and 7. **The springs are not necessary for the correct operation of the headlight doors, but it is a good place to keep them so they won't get lost.**

10.1

68-82 Headlight Electric Motor Up Grade Kit Supplement for noisy up or down operation

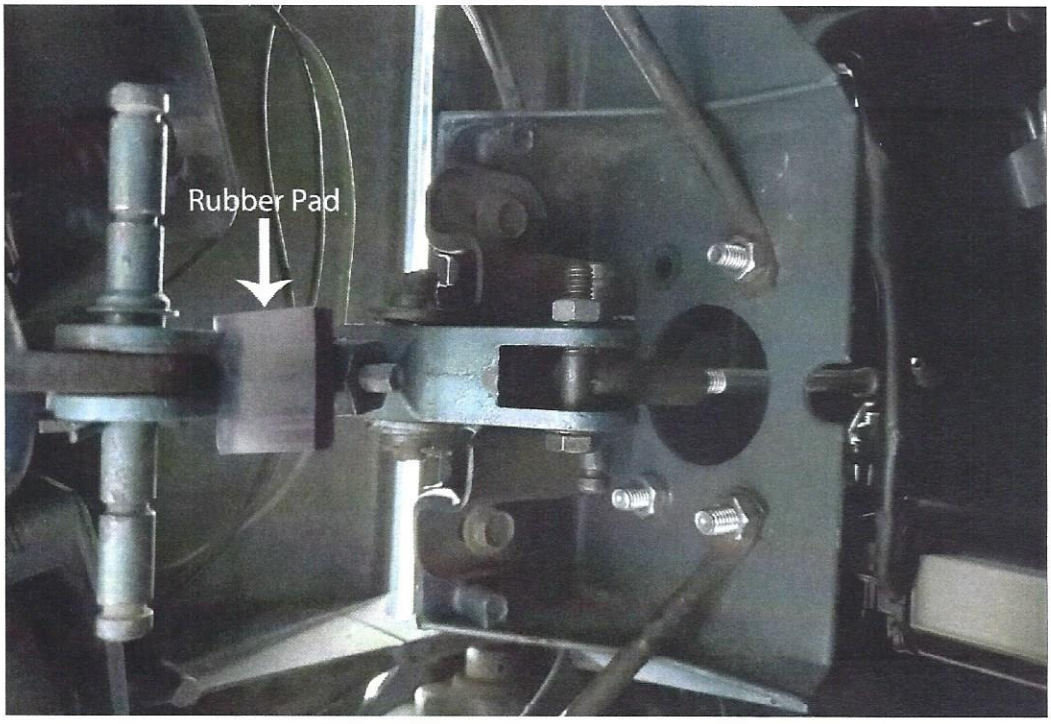
View is looking up from underneath the front valence air hole on the LH (driver's side), at the actuator linkage, picture shown is for a 1968 model for clarity.

Headlight switch is in the OFF position, both headlights are down.

Rubber pad should be applied as shown in the picture, as close as possible into the hinge point.

Wipe the area with alcohol to ensure the rubber pad will stick properly. Peel off the protective plastic/paper over the adhesive on the rubber pad and press it firmly on this area. Repeat on RH (passenger side) actuator linkage.

You're done!



11. Locate the vacuum holding tank, under the fender on the LH side at firewall, locate the large vacuum hose (yellow stripe) that goes forward along the LH fender, remove this line from the vacuum tee fitting and cap the tee with the vinyl push on cap (provided)

12. **INSTALL** the LH and RH motors (LH and RH stamped on the motor mounting bracket) using the speed nuts provided. **DO NOT ROTATE THE MOTORS WITH THE MANUAL TURN UP KNOBS ON THE MOTOR ENDS; THESE ARE FACTORY SET FOR THE HEADLIGHT DOWN ADJUSTMENT.**

INSTALL the new LH and RH motor assemblies in the two inboard holes where the vacuum canisters were removed from, the actuator levers on the motors will face out, and the manual turn up knobs on the motors will be pointing down. Make sure to reinstall the **in-board** original rod braces behind the mounting plates on the lower studs of the new motor mounts, secure with the speed nuts provided. See Picture # 2 and 3 for reference.

13. **ROUTE** the motor wires along of the blank side of the motor (**not** actuator lever side) and secure along the existing wire/vacuum hose harness under the front nose to the LH side of the car (snap ties provided), continue beside the left hand hood hinge and the body into the area beside the radiator. When this wire connector is installed in the control module you can use snap ties to secure the new wire harness. See Picture # 2 and 3 for reference.

14. Manually lower the headlight assemblies by pulling forward on the actuator link in the area you pushed backward to lock earlier.

15. **SCREW** the new actuator rods with ball ends into the original rod ends that you reinstalled on the pin shafts earlier, leave about a ¼" of thread exposed. Install one washer on the new motor lever shafts. Try to line up and push the ball ends onto the lever shafts. Screw the rods in or out as needed, when they will go on, take a **half turn clock wise and reinstall.** Install a washer and the clevis clip (provided) on each actuator to secure. See picture # 2 and 3.

16. **NOW** would be a good time to oil the pivot points on the original headlight assemblies, especially in the area where the springs were removed, Blaster Corrosion Stop is good, or any lithium base lubricant.

17. **REMOVE** the left front wheel. **CUT** out the template along the solid lines to use for drilling the holes to mount the actuator module.

18. Position the template alone the LH lower wheel house edge, push back the template until it is along the edge of the bump out that the upper control arm splash guard secures to. (See picture # 1 for clarity)

19. Using a 1/8" drill bit, carefully drill two pilot holes at the "+" marks on the template, follow them up with a 5/16" bit to finish, **PLEASE DON'T DRILL DEEP THE RADIATOR IS RIGHT THERE, AND THERE ALSO MAY BE OPTIONAL WIRING HARNESSES THAT MAY HAVE TO BE MOVED.**

20. Your actuator module will come with the new main harness already connected. Bring the module over to the LH front side, route the motor wires carefully beside the left hood hinge and the body, connect the motor wire harness, 4-pin connector, making sure it locks into the module. This connector in the module should face up when you push the module into position. Slide the module down between the wheel house and the radiator and attach to the wheel house using the plastic push pins provided, see Picture # 4.

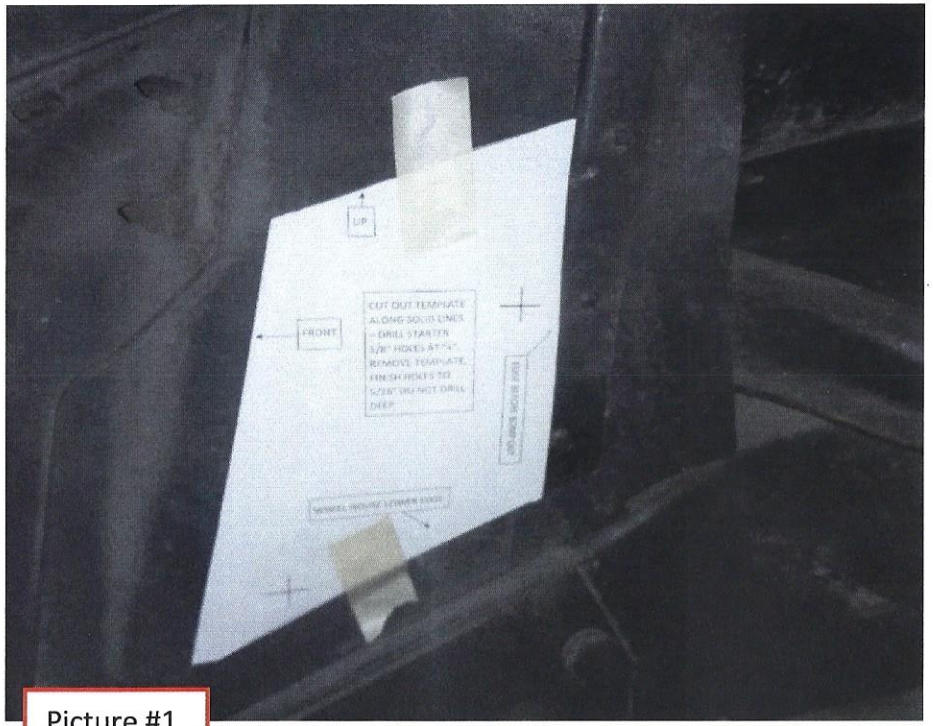
21. Route the brown single wire coming out of the main 5-pin connector (already plugged into the module), thru the factory wire harness access hole beside the radiator and down toward the LH side marker light, find the brown wire going into the side marker light, this will have 12V only when the lights are on, probe with a test light with the headlight switch **ON** if you are unsure of the color, **THEN TURN THE HEADLIGHT SWITCH OFF (POWER SHOULD GO OFF)_.** Using the wire splice provided, position the splice so the car wire will go through the splice, then push the new brown wire into the splice to the stop, use pliers to squeeze the metal part through the wires, bring the plastic tab over the top and lock, dielectric grease has been used here to help prevent corrosion.

22. **PLEASE! DISCONNECT THE NEGATIVE BATTERY TERMINAL.** Install the red wire terminal on the red wire terminal on the alternator; install the black wire terminal on the black wire terminal on the alternator. Secure the wires along the car harness with the snap ties provided.

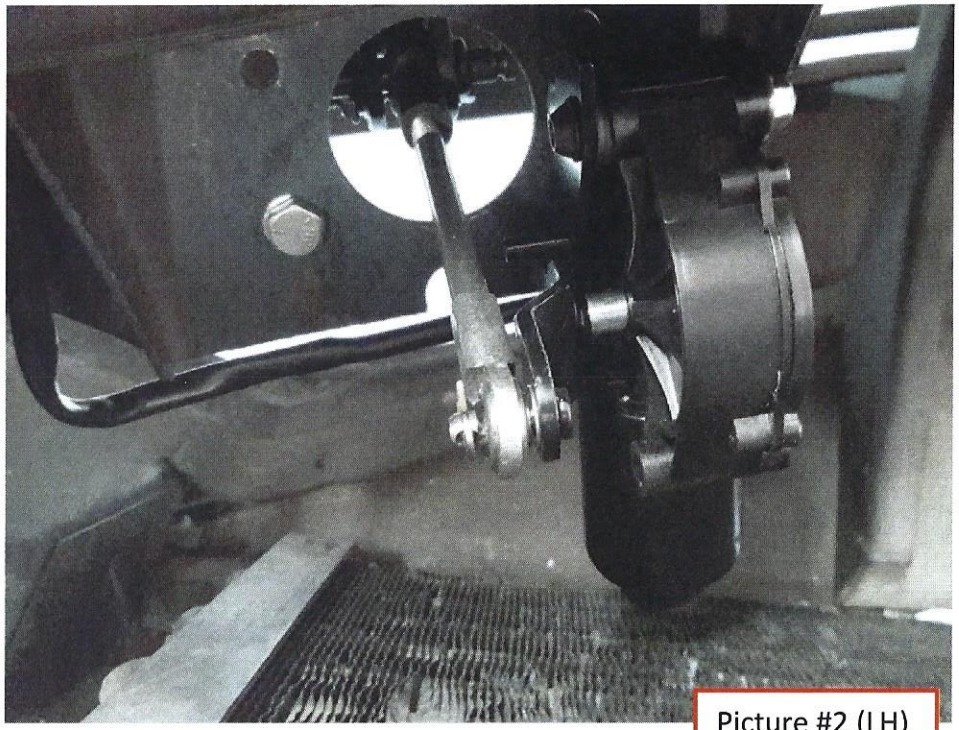
22.1 When your Corvette is in storage or not driven for months at a time please disconnect the 5-cavity connector from the new module or use a 100% battery disconnect switch, this will prolong the life of the new module.

23. Reconnect the battery, you may hear some headlight motor movement, pull your headlight switch all the way on until the motors stop running, now push the headlight switch off, this will orient the module. Good Job, Enjoy!

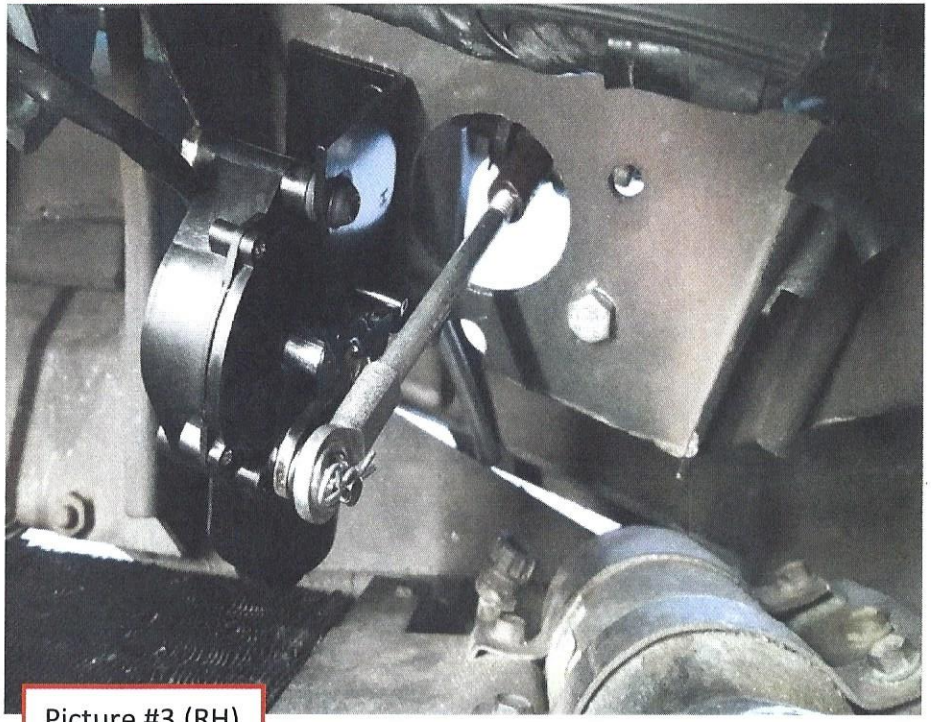
24. Reinstall the wheel, hood, and grills.



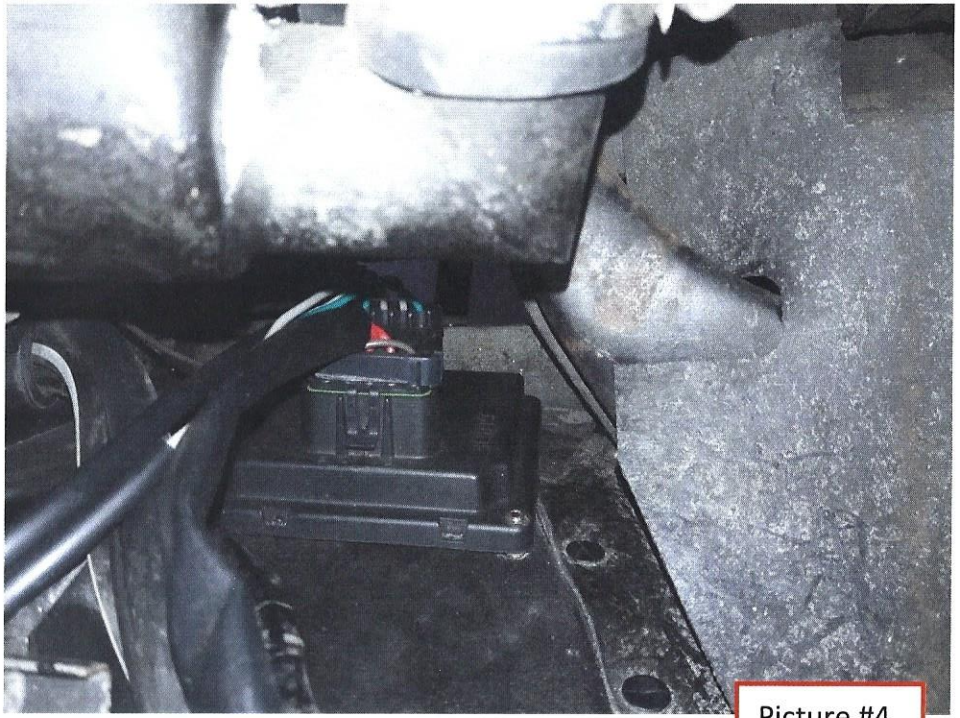
Picture #1



Picture #2 (LH)

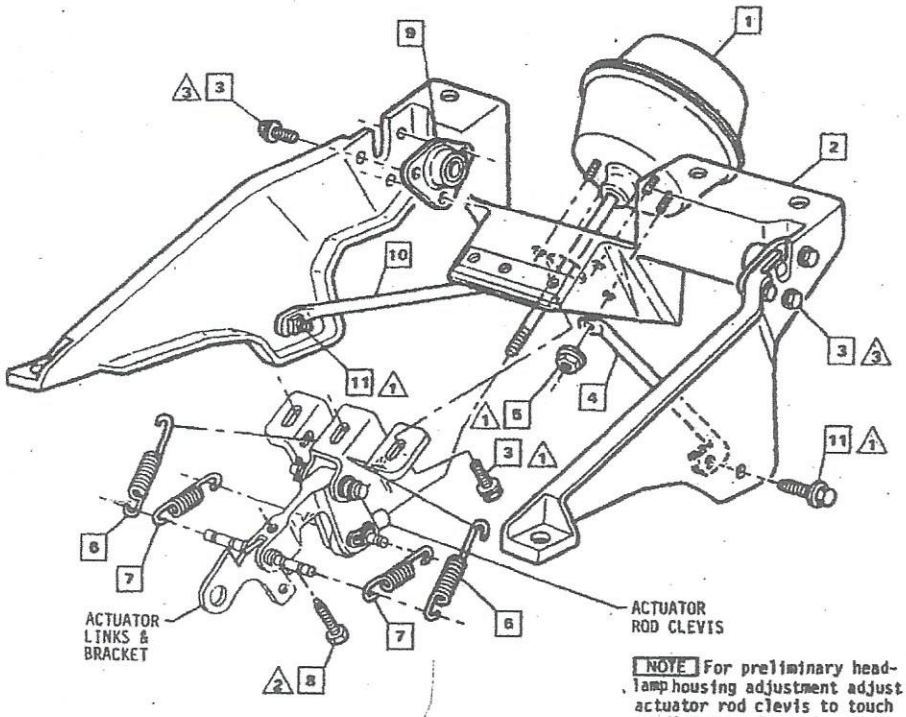


Picture #3 (RH)



Picture #4

DRAWING # 1

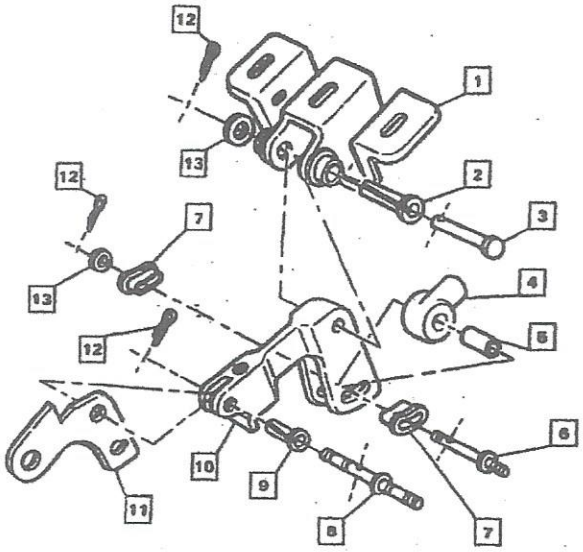


5638541	1	ACTUATOR ASM RH
5638542	1	LH
347889-0	2	SUPPORT L & RH
3846201	3	BOLT/SCREW
3926353-4	4	ROD ASM-ACTUATOR OUTBOARD L & RH
1359887	5	NUT
3935516	6	SPRING
3926434	7	SPRING
473239	8	BOLT/SCREW-ADJ
362995	9	BEARING ASM
3926351-2	10	ROD ASM-ACTUATOR INBOARD L & RH
3847757	11	BOLT/SCREW

NOTE For preliminary headlamp housing adjustment adjust actuator rod clevis to touch condition at forward end of slot, then add 1/2 turn more to give approx. .03 interference condition with lamps on.

NOTE For final headlamp housing adjustment use screw asm item 8 and fit to checking dimensions specified on UPC 11Z Sheet 1.

DRAWING # 2



3922499	1	BRACKET
3927674	2	BUSHING
3927676	3	PIN
3958887	4	ROD-CLEVIS
3922498	5	SLEEVE
3927672	6	PIN
3922497	7	INSERT
3926433	8	PIN
3927675	9	BUSHING
461162	10	LINK
3953034	11	LINK
456170	12	C. PIN
3825452	13	WASHER

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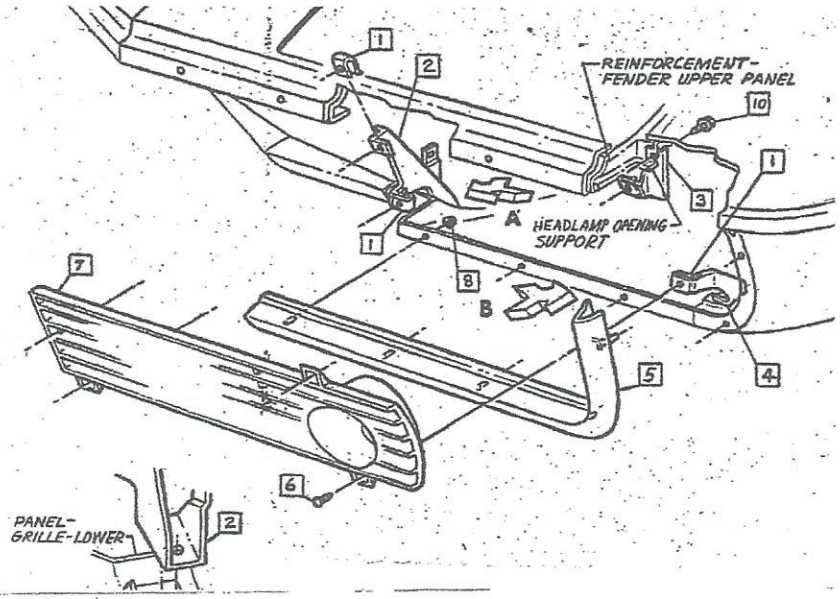

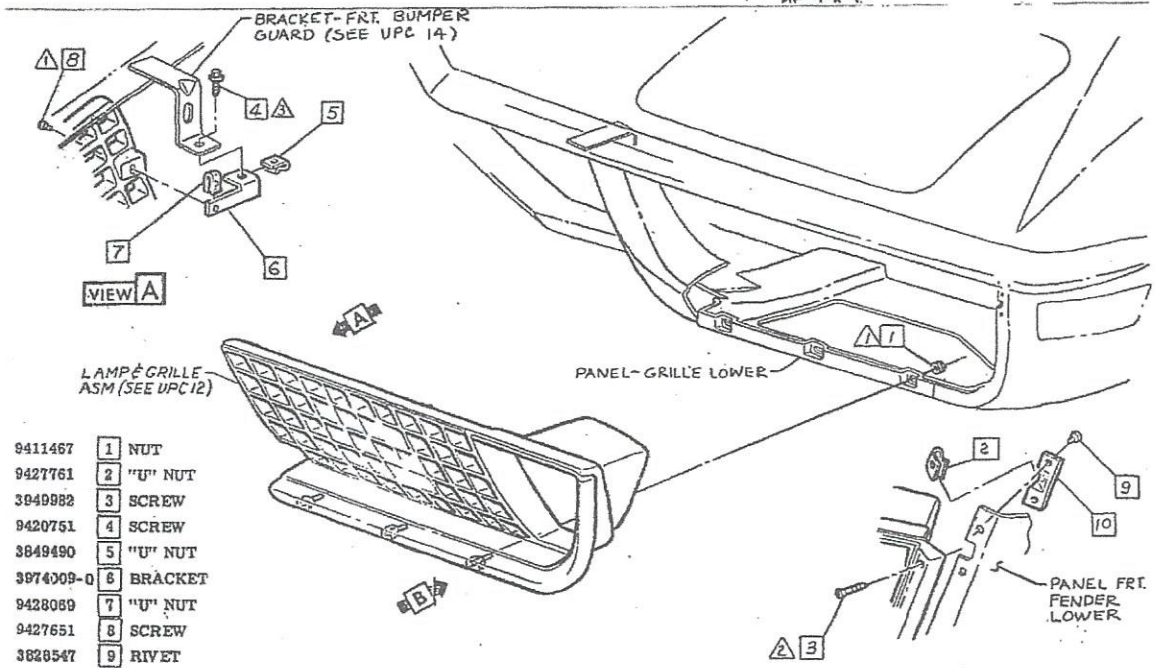

9411467	1	NUT
9427761	2	"U" NUT
3949982	3	SCREW
9420751	4	SCREW
3849490	5	"U" NUT
3974009-0	6	BRACKET
9428069	7	"U" NUT
9427651	8	SCREW
3828547	9	RIVET
3976359-0	10	BRACKET

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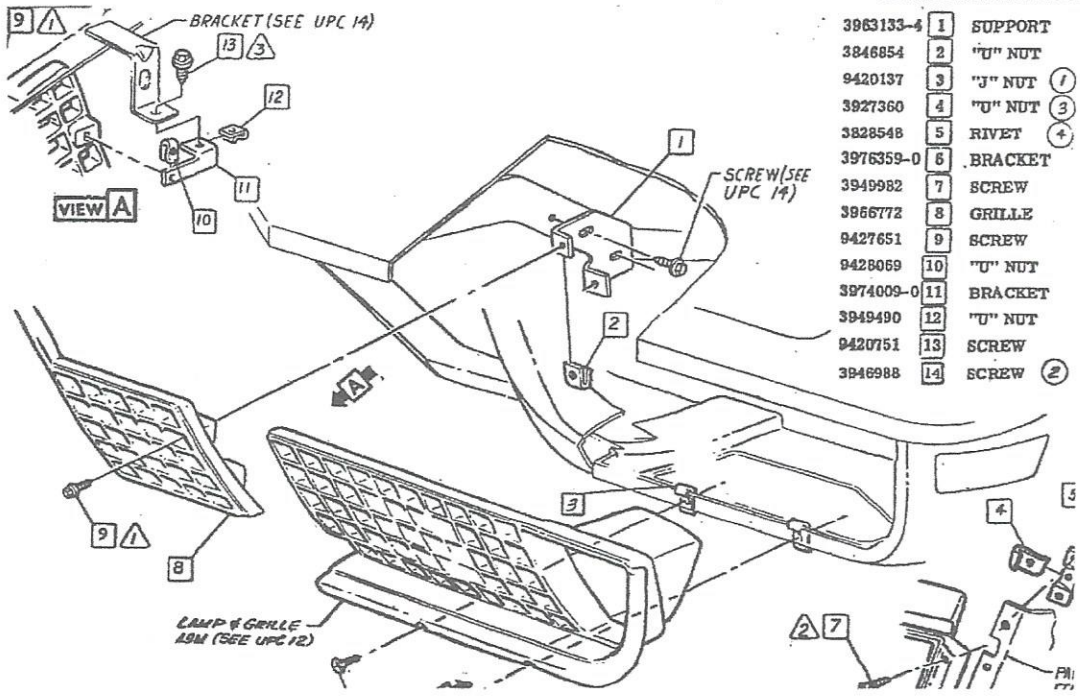
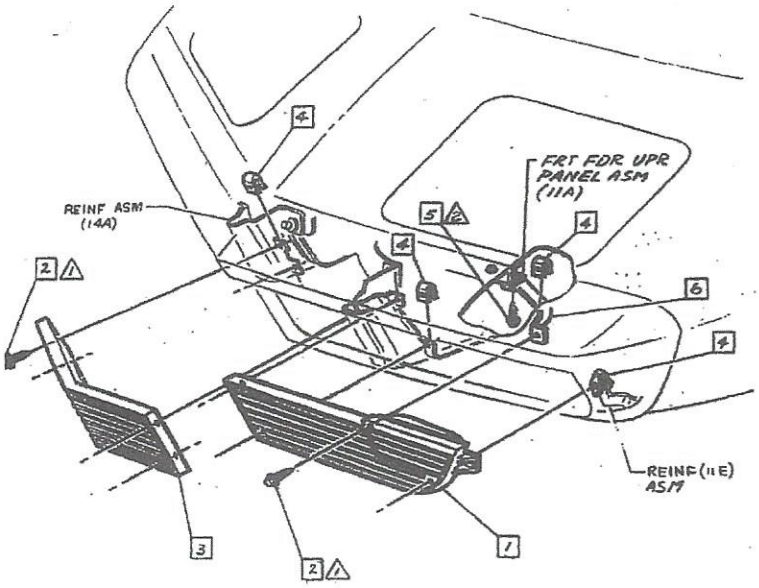
71 - 72

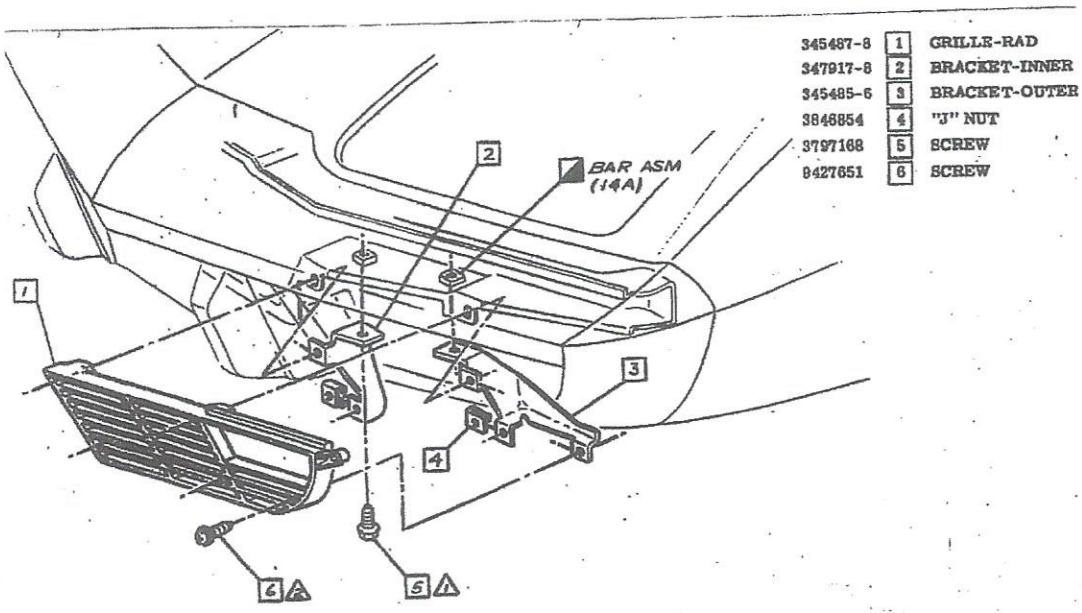


3963133-6	1	SUPPORT
3846854	2	"U" NUT
9420137	3	"J" NUT (1)
3927360	4	"U" NUT (3)
3828548	5	RIVET (4)
3976359-0	6	BRACKET
3949982	7	SCREW
3966772	8	GRILLE
9427651	9	SCREW
9428069	10	"U" NUT
3974009-0	11	BRACKET
3949490	12	"U" NUT
9420751	13	SCREW
3946988	14	SCREW (2)

73 – 74



331835-6	1	GRILLE-OUTER
9427651	2	SCREW
331834	3	GRILLE-CENTE
3846854	4	"J" NUT
3797168	5	SCREW
331859-0	6	BRACE



345487-8	1	GRILLE-RAD
347917-8	2	BRACKET-INNER
345485-6	3	BRACKET-OUTER
3846854	4	"J" NUT
3797168	5	SCREW
9427651	6	SCREW

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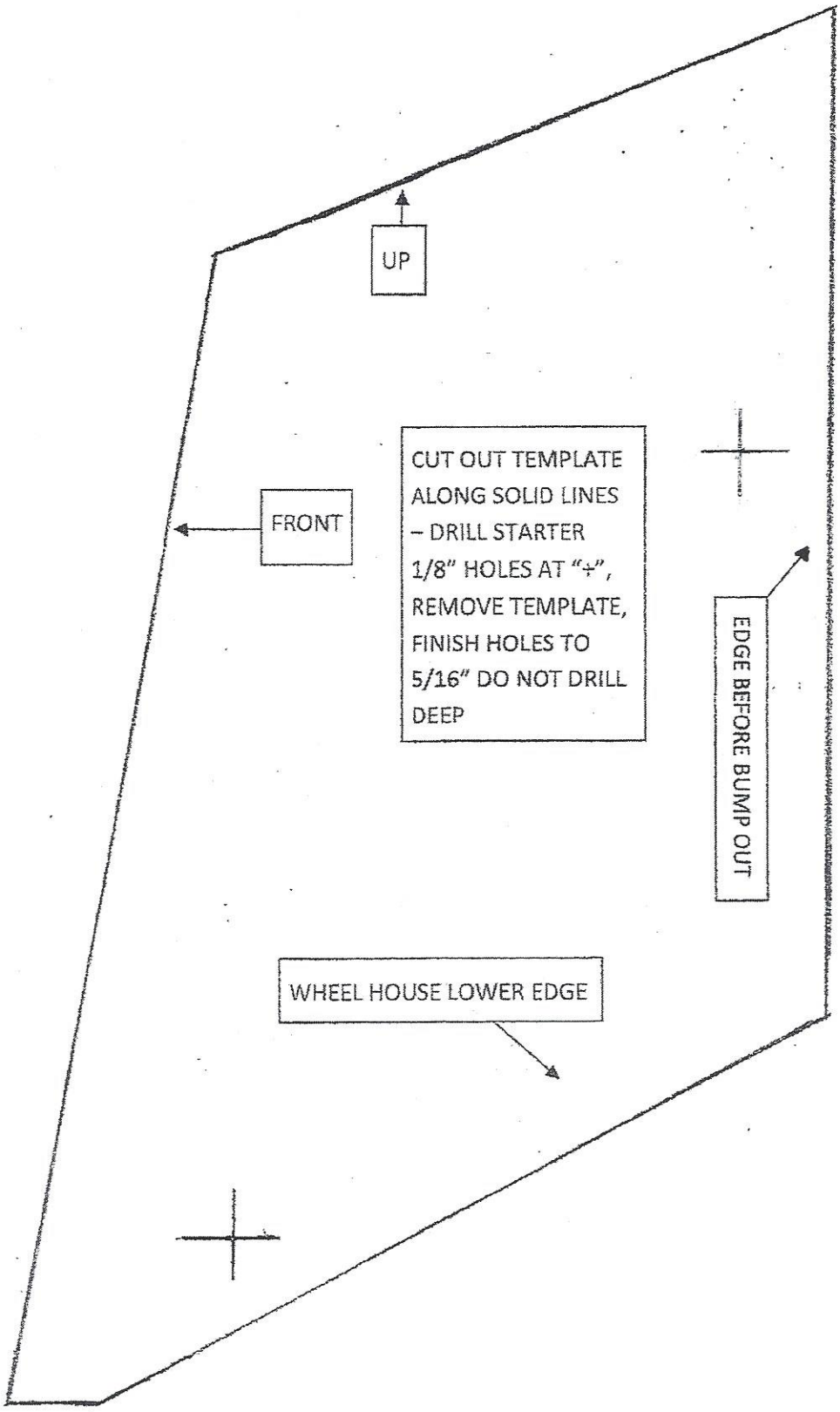
UP
FRONT
CUT OUT TEMPLATE ALONG SOLID LINES – DRILL STARTER 1/8" HOLES AT "÷", REMOVE TEMPLATE, FINISH HOLES TO 5/16" DO NOT DRILL DEEP
EDGE BEFORE BUMP OUT
WHEEL HOUSE LOWER EDGE

Trouble Shooting the 68-82 Headlight Electric Motor Upgrade Kit

For the Installer

Both headlights do not operate

1. Check both fuses on the red wires going to the *module*, replace as needed. operates/done

2. Insure battery voltage is no less than 12 v.

3. Remove the red module power wire from the source (on the alternator) **OR** unplug the 5 cavity connector on the *module*, allow to sit for 30 seconds, reconnect and test. (this will reset the *module*) operates/done. Still not working? proceed.

4. The brown wire is the trigger wire to activate the operations in the *module*, remove this wire from the **blue** running splice connector OR push a straight pin thru the covering on the Brown wire to make contact with the copper wire inside. Apply 12v positive, with a jumper wire from the **car battery** to the brown wire or to the straight pin, the headlights should rotate up and stop, remove the 12v from the brown wire and the headlights should close automatically. **This proves that the *module* is good.** If this works **ONLY** by applying 12v positive directly to the loose brown wire or the pin, then you have (1) a bad connection at the brown wire or **blue** running splice connector and the side marker light wire **OR** (2) a bad headlight switch not turning the side marker lights on. Replace or repair as needed. Otherwise replace the module. operates/done

One headlight operates the other doesn't

5. Trace the motor wires (red and black), coming from the headlight motor that is not operating, back to the 4 cavity connector on the module, mark these two wires with masking tape. Unplug the 4 cavity connector from the *module*.

6. Using the manual turn up wheel on the back of the headlight motor, turn the wheel **clockwise,** looking down from the front of the car, until the headlight is about ½ way up. Apply 12v positive power and negative ground to the masking tape marked wires, using 2 small jumper wires, one positive and one negative (18ga is fine), from the car battery, to the red and black wire terminals in the connector, (metal pieces in the connector), just until the motor moves all the way

up or down. Now reverse the positive and negative jumper wires on the red and black wires, the motor should rotate completely in the opposite direction, remove power and ground jumper wires. If you noticed any binding or hard spots these will have to be eliminated, take corrective action (lubricate, replace worn parts, remove any interference contacting the headlight assembly. Test with the headlight car switch. operates/done. If the motor still does not operate, replace the *module*.

Both headlights operate, but one or both don't go all the way open or close.

At this point the components of the kit are working correctly. The following steps may be able to help with the on car issues that are out of our control.

7. Move the headlights manually as described in step 6 using the manual turn up wheels. You are feeling for any hard spots or binding, these will have to be eliminated. The *module* will sense any obstruction or resistance during operation and shut off, individually. In addition, the motors will time out and cut power after 4 or 5 seconds individually.

8. Check the initial adjustment on the push rod going from the motor lever to the headlight assembly, in the closed (down) position there should be some play.

9. Check to make sure the new rubber blocks are installed correctly and not missing, the other issue is tightening the 1-3/4" long bolt and nut that goes into the forward area of the curve slot on the underside of the headlight actuator assembly **not** being installed **OR** installed but the nut tighten so that the bolts can't float, the nuts should be left loose, the bolt threads should just be contacting the nylon thread locker portion of the nut.