

## INSTALLATION STEPS

### 68-72 ELECTRIC MOTOR OPERATED WIPER COVER PANEL SYSTEM UPGRADE KIT

Thanks for ordering your upgrade kit to convert from a vacuum operated system to our electric motor operated system. Please read through the installation steps to get a feel for what's going on and how really simple the installation is!

Tools needed: (2) 1/2" open end wrench, (1) 3/8" open end wrench-1968 only, 1/4" drive ratchet, 3" x 1/4" drive extension, 3/8" x 1/4" drive socket, side cutter pliers, 6" slip joint pliers, 6" channel lock pliers

1. Raise the hood. Make sure to secure the hood by putting a 1/4" bolt of sufficient length and nut through the hole in the hood prop track and the slide, hand tighten. This will prevent the hood from closing if it gets accidentally bumped and ruining your day. Ignition switch is in the **OFF** position.
2. Remove the vacuum hoses from the wiper cover panel vacuum actuator assembly. Tuck them back under the inner RH fender panel where the vacuum relay is located.
3. Trace the vacuum supply line, 1/4" I.D. with a yellow stripe, from the vacuum relay for the wiper cover panel system vacuum canister, to a tee, which should be under the LH fender near the vacuum storage tank. Remove this hose at the tee and cap the tee using the black vinyl push on cap provided.
4. Locate the Vacuum Relay Assy, Fig D3, # 10, it should be on the rear side of the Right Hand fender skirt, remove the 1/8" I.D. hose (should have a White stripe) from the Relay Assy and plug it with the metal solid rivet provided.
5. Push back the black dust *boot*, Fig D4, View A, #7, loosen the locking *nut* #8 from #9 *nut-adjusting*.
6. Remove the 2 nuts, bolts, washers and bushings, Fig D4, View A, #'s 3,4, and 5 that attach the vacuum *actuator and valve assembly* View A, #6 to the (*reinforcement*) mounting bracket. Rotate the vacuum *actuator and valve assembly* counter clockwise to remove it from #9 *nut-adjusting*. Remove # 8 *nut* from the *actuator and valve assembly*, save this nut for reuse later. Remove the vacuum *actuator and valve assembly* and dust *boot* from the engine compartment.

7. Remove the two nuts holding Fig D3, #5 *reinforcement*, (vacuum actuator mounting bracket), to the firewall, save these nuts for reuse. Remove the bracket from the engine compartment.
8. Install the *nut*, (# 8, removed in Step 5), on the new bent actuator rod supplied in the kit. Run the nut all the way up on the threads.
9. Screw the *nut-adjuster*, Fig D4, View A, #9, all the way in on the existing threaded rod coming out of the hole in the firewall.
10. Screw the new bent actuator rod, supplied in the new kit, all the way in the, Fig D4, View A, #9, *nut-adjusting*.
11. Install the new electric motor assembly on the 2 studs coming out of the firewall where the old vacuum system bracket was removed. Replace any shims back in their original position behind the new motor mounting bracket. There is room to move the mounting bracket around on the studs, line the semi circle cut out on the new motor mount with the round hole in the firewall, tighten these 2 mounting nuts at this time, **NOT GORILLA TIGHT. See picture # 1.**
12. Make sure the wiper cover panel is in the full down position. **DO NOT TURN THE MANUAL TURN UP WHEEL AT THE END OF THE MOTOR CASE OR TRY TO ADJUST THE MOTOR AT THIS TIME, IT IS FACTORY SET FOR THE DOWN POSITION.**
13. Adjust the new actuator rod by turning the *nut-adjuster*, Fig D4, View A, #9, with one hand while holding the ball joint rod end with the other hand, until the ball joint rod end will just slip over the motor lever dowel rod, the bend in the rod should be facing **UP**, secure it on the motor lever with 2 washers behind and 2 washers in front on the ball joint. Insert the hair pin clip in the hole on the shaft.
14. Holding the *nut-adjuster*, Fig D4, View A, #9, with a wrench, snug the Jam *nut*, View A, #8 to lock in the adjustment. **See picture # 2.**
15. **Very important**, See Fig. D4, re-adjust the *nut* and *stud*, View B, #8 and #14. Loosen # 8 *nut* (Jam *nut*). Now manually, using the manual turn up wheel on the end of the motor, turn the wheel **COUNTER CLOCKWISE**, you should see the wiper panel cover begin to come up, continue turning the wheel until the wiper panel cover is in the **full up** position. You may have to give the panel a little wiggle by hand to make sure it is in the **full up** position.
16. Turn the mushroom shaped *stud* clockwise toward the metal *bracket*, Fig D4, #11, until the switch button bottoms out and it contacts the **METAL** part of the switch assembly *bracket* firmly. Tighten the jam nut to secure this adjustment. **See picture #3. Using the manual turn up wheel, return the wiper cover panel to the full down position.**

OK! Take a break, the hard part is done!

## Electric Hook Ups

This would be a good time to take the negative battery cable off, I know it's a pain but things happen, you're working around older wire terminals that are not shielded sometimes and wire that is over 50 years old!

17. You will notice that we have supplied ample wire on the motor harness, 2 wire 4 cavity connector only 2 cavities are used. We also provided ample wire on the main power harness and brown signal wire (5 cavity connector already installed in the operating module/relay package.

This should make the selection of a place to mount the operating module very easy. Do to the options available on the 1968 to 1972 Corvette models, one location will not work for every engine compartment.

Things to consider in selecting a location:

1. You will be running the Red and Brown wire to the wiper motor area, the black wire is the ground and will probably end up on the ground stud on the alternator.
2. Don't choose an area where wheel splash water will directly splash on the operating module.
3. Don't choose an area that would be suspect for really hot temperatures.

The following are some areas that you might want to consider:

The area on the LH wheel house between the brake master cylinder or power brake booster and the alternator.

The area on the RH wheel house rear portion where the vacuum relay is.

The area on the LH wheel house front portion near the radiator core support.

A template is provided to mark the two holes needed to mount the module and relay package, please drill shallow and know what's behind where you are drilling.

**WARNING, OK, here is your standard warning about disconnecting the negative battery cable, you will be doing two running splices, close to the wiper motor, it's a tight fit, please use good judgment.**

18. The operating module will come prewired with the 5-cavity connector already plugged in. Attach the black wire (ground) to the ground stud on the alternator.

19. Attach the red wire (power) to the yellow wire going to the windshield wiper washer pump, use the blue running splice connector provided. If your Corvette does not have the washer pump option the yellow and light blue two cavity plug connector is still there somewhere near the wiper motor, it is part of the standard car harness, it's just not plugged in to anything. Use the blue running wire splice provided. Run the yellow wire so that it will go thru the splice connector, then push the red wire into the splice connector until it stops. Now the fun part, using pliers squeeze the little metal tab through the blue splice, now bring the blue plastic tab over the top of the splice and lock it in.

20. Locate the 3 cavity connector that is plugged into the wiper motor. You will see a Green wire, a Yellow wire, and a Light Blue wire. The Light Blue wire is the one easiest to get to, more on the outer side of the connector away from the actual wiper motor. Using the blue splice connector provided, using the same prior procedure, splice the brown wire (trigger) into that *light blue* wire. We found it easier not to try to pull that 3-cavity connector from the wiper motor, sometimes the connector crumbles in your hand. **See picture # 4**

Make sure the key is "off", reattach the ground wire to the battery –YOU'RE DONE!

#### LET'S GIVE IT A TEST!

Key "on", slide the wiper switch to "low", (you may want to have a water spray bottle handy or some windex to help lubricate the dry windshield), the wiper panel should come up and slide forward, the wipers should wipe, put the wiper switch to "high", the wipers should wipe faster. Now slide the wiper switch to the "off" position, the wipers should go into "low" speed and then "park". After about a 3 second delay the wiper panel should slide back into the original down position.

Something to keep in the back of your mind: the module, (controller) used in this kit is the 1997-2004 Corvette headlight actuator module. Here's the important part: if something gets in the way of the wiper panel going up or down, as your finger, a wiper arm or blade, or just stiff panel linkage, the module will shut the panel motor off immediately, it also will time out and shut the motor off after about 5 seconds, if perhaps the motor gear shears to keep from draining your battery. These are good safety features that other kits don't have.

The following procedure is very handy when you need it, you might want to keep this with your owners manual or in the storage trays behind the seats

### **IMPORTANT NOTE FOR SERVICING THE WIPER BLADES AND WIPER ARMS.**

This procedure will allow you to move the wiper panel up and out of the way and stop the wiper motor (and blades) where ever you need to on the windshield.

Key "ON", put wiper switch on "low", the wipers should wipe, turn the **manual override switch** directly under the steering column lower dash panel "OFF", to stop the wipers without closing the wiper panel, now unplug the new wiper panel motor connector from the operating module, (red and black wire in the 4-cavity connector). Turn the key "OFF"

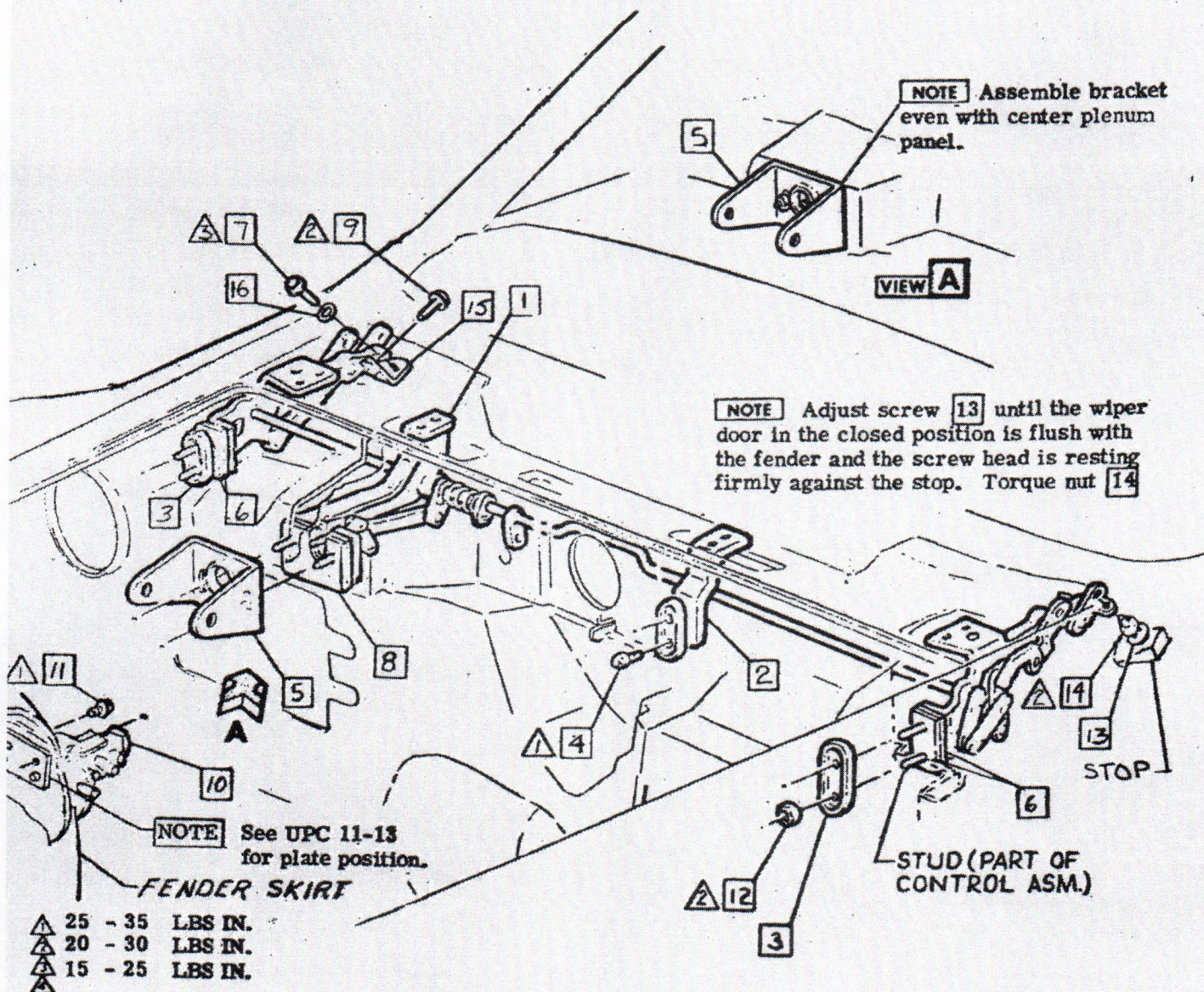
You can leave it like this with the panel motor unplugged from the module for extended periods without any bad things happening. You can use the wipers whenever you need to as normal.

When you want to hook the wiper panel motor back up follow this procedure: the ignition switch is "OFF", insure the wiper switch is "OFF" and the manual override switch is "OFF", (the way you turned it when you stopped the wipers above). Turn the ignition switch "ON", turn the override switch "ON", with the wiper switch "OFF" the wipers should "PARK". Plug the wiper panel motor connector back into the operating module. Wiper panel should return to the down position and operate normally.

# FIG D3

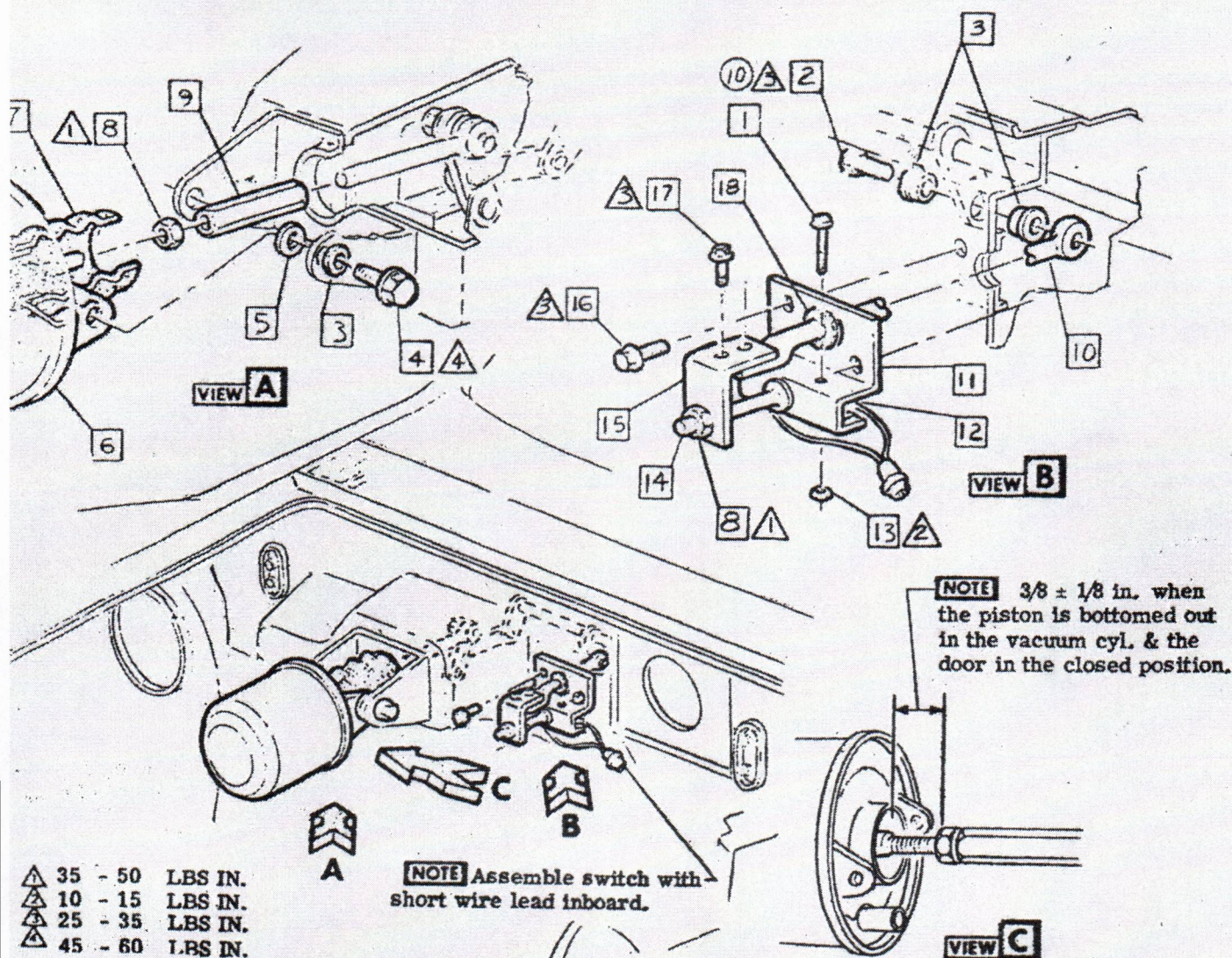
20	1	3953000	CONTROL ASM
	2	3918519	BRACKET-GRILLE
	3	3921586	REINFORCEMENT
	4	9420680	SCREW
	5	3922347	REINFORCEMENT
	6	3926004	SHIM -AS REQ'D
21	7	3840000	SCREW

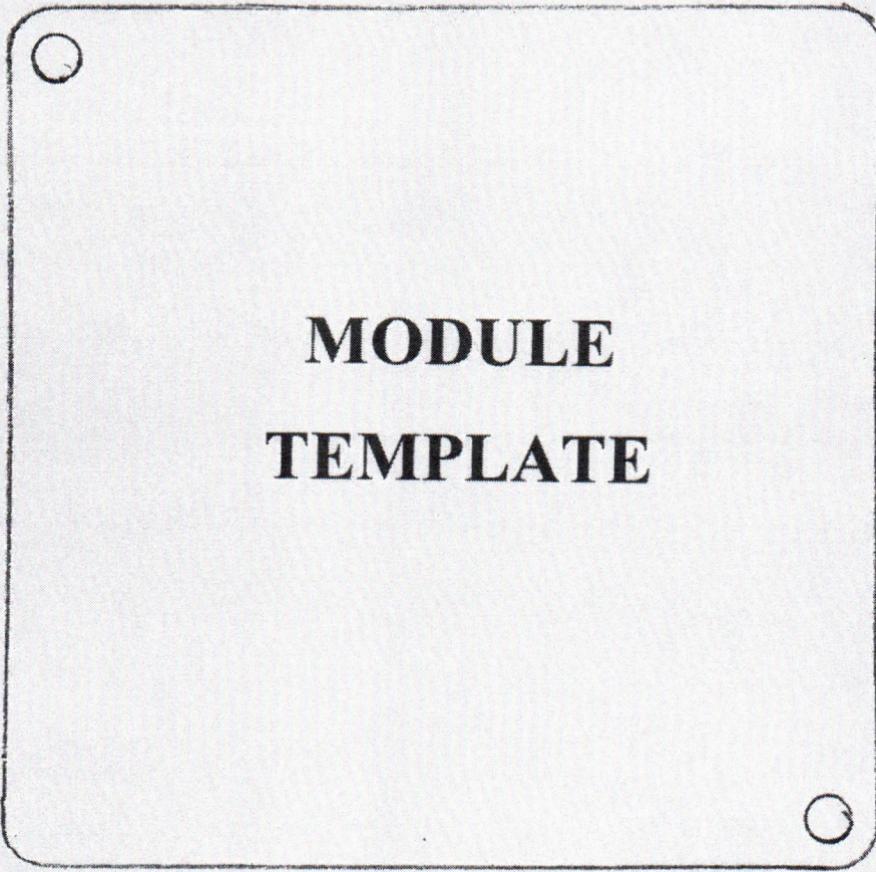
	8	3926483	SHIM -AS REQ'D
	9	9420431	SCREW
	10	5638427	RELAY ASM
	11	9421033	SCREW
	12	3759924	NUT
	13	9428030	SCREW
	14	145487	NUT
22	15	3953013-4	BRACKET L. & R.H.
23	16	9417587	WASHER



# FIG D4

1	423582	SCREW ASM	12	3923962	SWITCH ASM
2	3922099	SCREW	13	134530	NUT
3	3922010	BUSHING	14	3922392	STUD
4	3945359	SPL. BOLT	15	3942787	EXTENSION
5	3922388	P. WASHER	16	9420680	SCREW ASM
6	5638277	ACTUATOR & VALVE ASM	17	9421033	SCREW ASM
7	3922348	BOOT	18	3922395	GROMMET
8	9417954	NUT			
9	3948074	NUT-ADJUSTING			
10	3922390	ROD			
11	3928809	BRACKET			

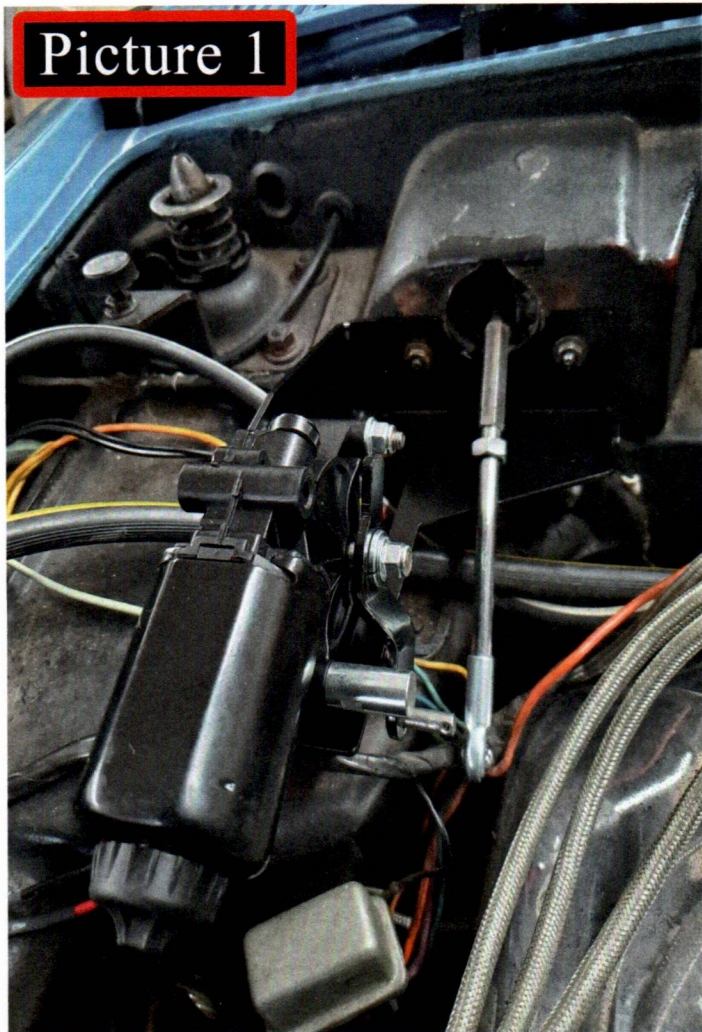




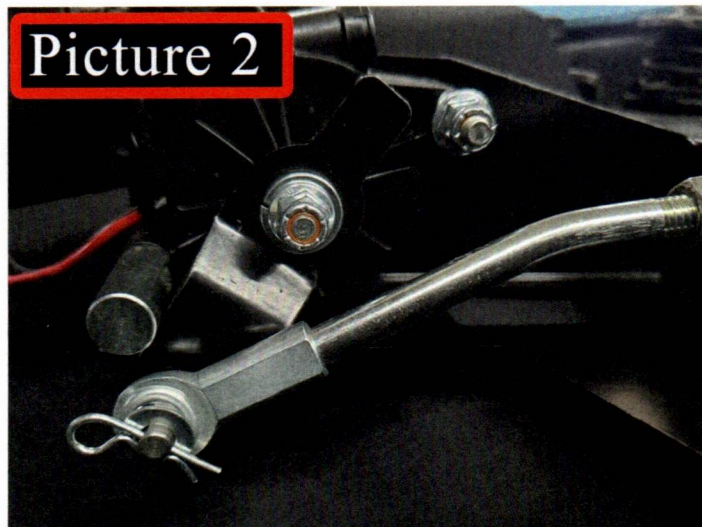
**MODULE  
TEMPLATE**

# 68-72 Electric Motor Operated Wiper Cover Panel System Upgrade Kit

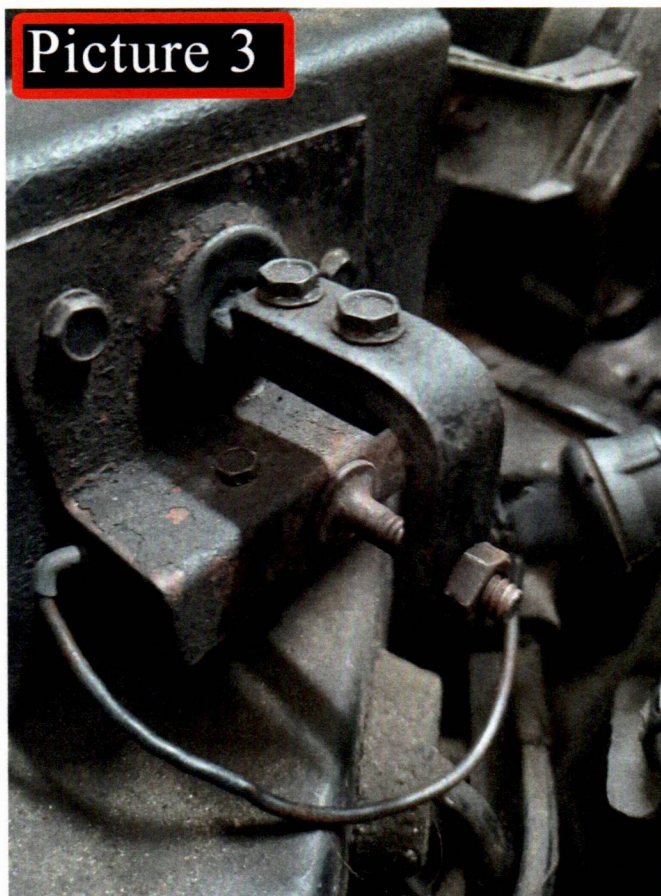
Picture 1



Picture 2



Picture 3



Picture 4

