Exhaust Switch Mod ~ instructional walk-through

First of all, THANX to 'sveda', ian and 'encrypted' for all the help with figuring this out, the diagrams to get us all started and further testing to do this right.

You can add a resistor on the +12V line -- adding this resolves the ECU throwing a diagnostic code for the vacuum-solenoid. (*This code does not trigger an MFI light, but is reportable via VAG-COM*)

'encrypted' first tested this theory and posted his successful-results! Yes, it works and i would suggest you do this right , run four wires and set it up to not throw a code (so you're clear when you go for service.)

*Personally, I am running the original design, 3-position switch and recently took in my .:R for warranty work on the brake light switch. I flipped the Exhaust switch to the default[OEM] setting, started up and drove over. The service department decided to completely reprogram my .:R32, and to replace the defective-brake light switch they removed the lower panels to work beneath the steering wheel. I'm glad that I did a discrete job with the wiring; also the Exhaust switch triggered **Ø VAG-CODES.***

Tools:

- Flash Light 🔦
- Torx driver *(not sure of size ~ sorry)*
- Metric Sockets (13mm used)
- Needle Nose Pliers
- A 4-strand wire (with a marker line on 1-side) /**or**/ two 2-stranded wire (with a marker line on 1-side of each to make distinguishable) /**or**/ four single strand different colored wires ~ about 4 feet, but check running them all with plenty of slack along the outside from the gear shifter back under the dash, across and down to the Grey+blue wire
- High-temp Soldering iron
- Rosin Core Solder
- Flux
- Three-way or Two-way, single pole or double pole Switch (try to find one with a small footprint, Radio Shack or your local electronics store)
- 1K 1/2W Resistor *(see below; buy a couple in case one gets messed up)*
- Zip-ties
- Drill & bits
- Electrical Tape
- MultiMeter *(not a must, but Recommended-for-Testing!)*
- Hot glue gun *(not a must)*
- Heat-shrink tubing *(not a must)*

[I hope I got it all for ya 🙂]

Here's a step-by-step breakdown of how to do this:

**STEP 1 - REMOVING THE LOWER DASH PANEL**

1., 2. & 3. Remove these screws, then pop the left (1.) and right (3.) tabs out from the panel in front of it. next, push both in opposite directions and pop the center tab out; slide the lower dash panel out towards the steering wheel. you can now place the lower dash panel off to the side.

1. & 2. Remove these nuts. Take the front component off and place it below by the dead-pedal. Take the second/upper component off, and then you should be able to sneak it up and out of the way.

**STEP 3 - LOCATING THE GREY w/ BLUE-STRIPE WIRE**
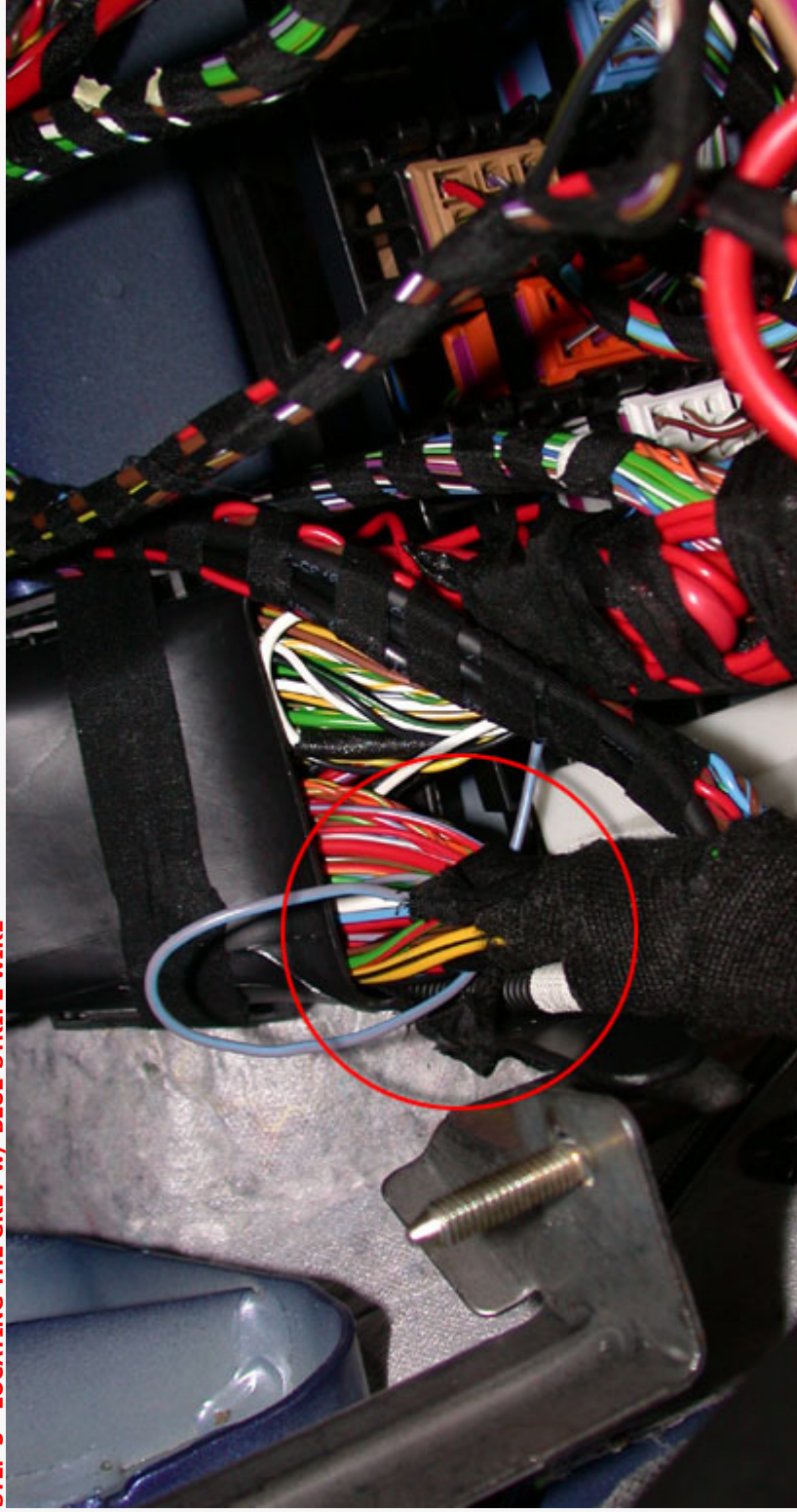
See-Above. Notice in my picture, I was VERY LUCKY, because I took my exacto knife and lightly sliced the wrapping to find the Grey with Blue-stripe wire directly behind it. (Now notice where I cut; Once I pulled the wrapping back, it was right behind there so I pulled it to get some slack ~ *there's a bit of extra, luckily*) I found that the Grey+blue wire ran up from the large bunch (on the left), then over to the smaller bunch (on the right) and up to the ECU ~~ i hope this helps you locate it.

STEP 4 - RUNNING WIRES
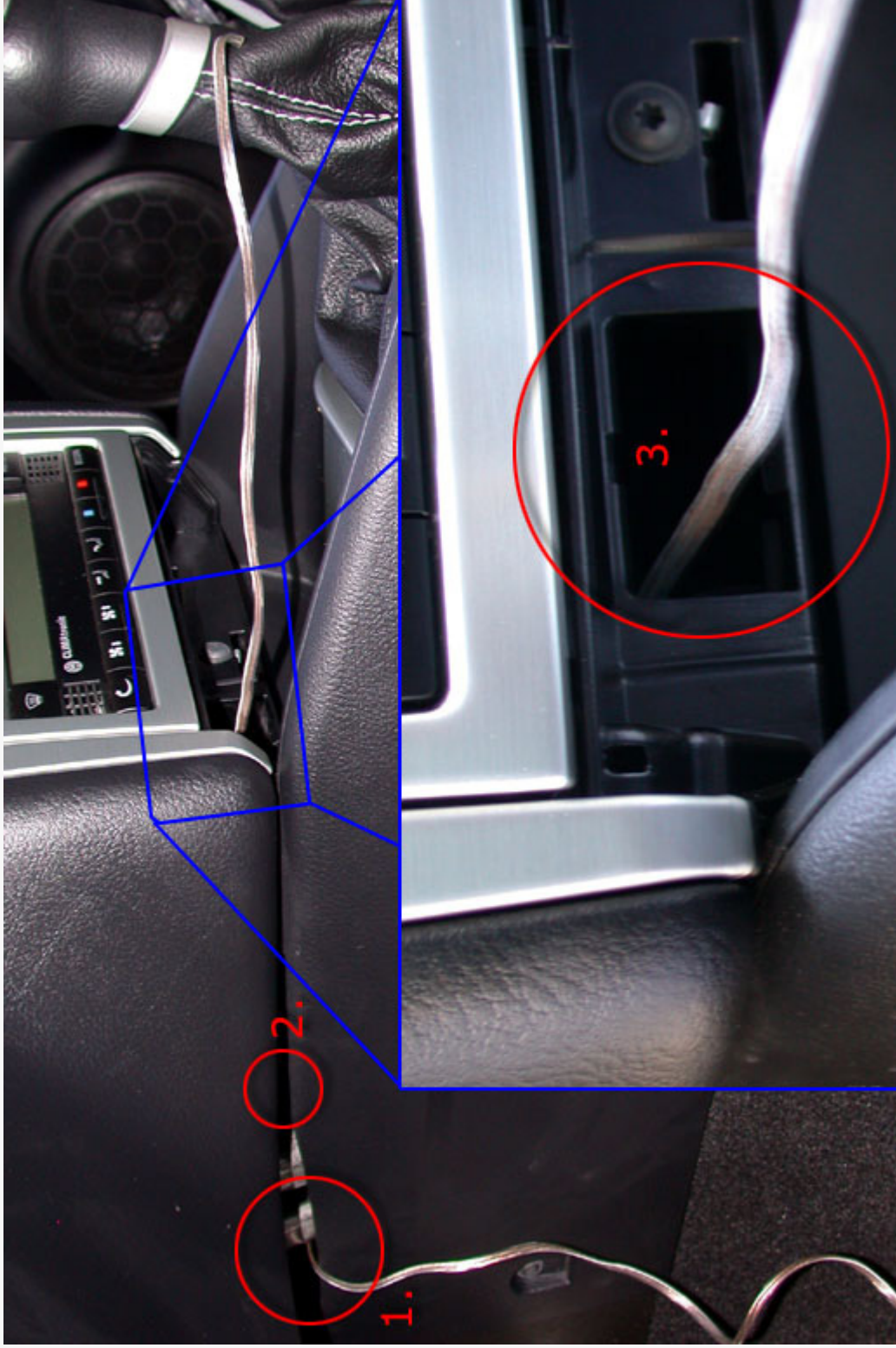
1. First, notice there are two metal bars above the screw in the lower-middle console area. First, run your wires (Switches, Ground & +12V) behind those metal-bars, curve them so they comes back out

2. When the wires comes out here, pull a bunch of slack and put them back through right before the panel curves up. you should be able to aim them very easily through the opening.

3. To pop this panel out to run the wires through, put your hand on the bottom edge and pull forward, it should easily come forward. Run the wires through there; I would recommend having enough slack to reach the shifter (this will give you space to test with once you're ready)

STEP 5 - RUNNING WIRES
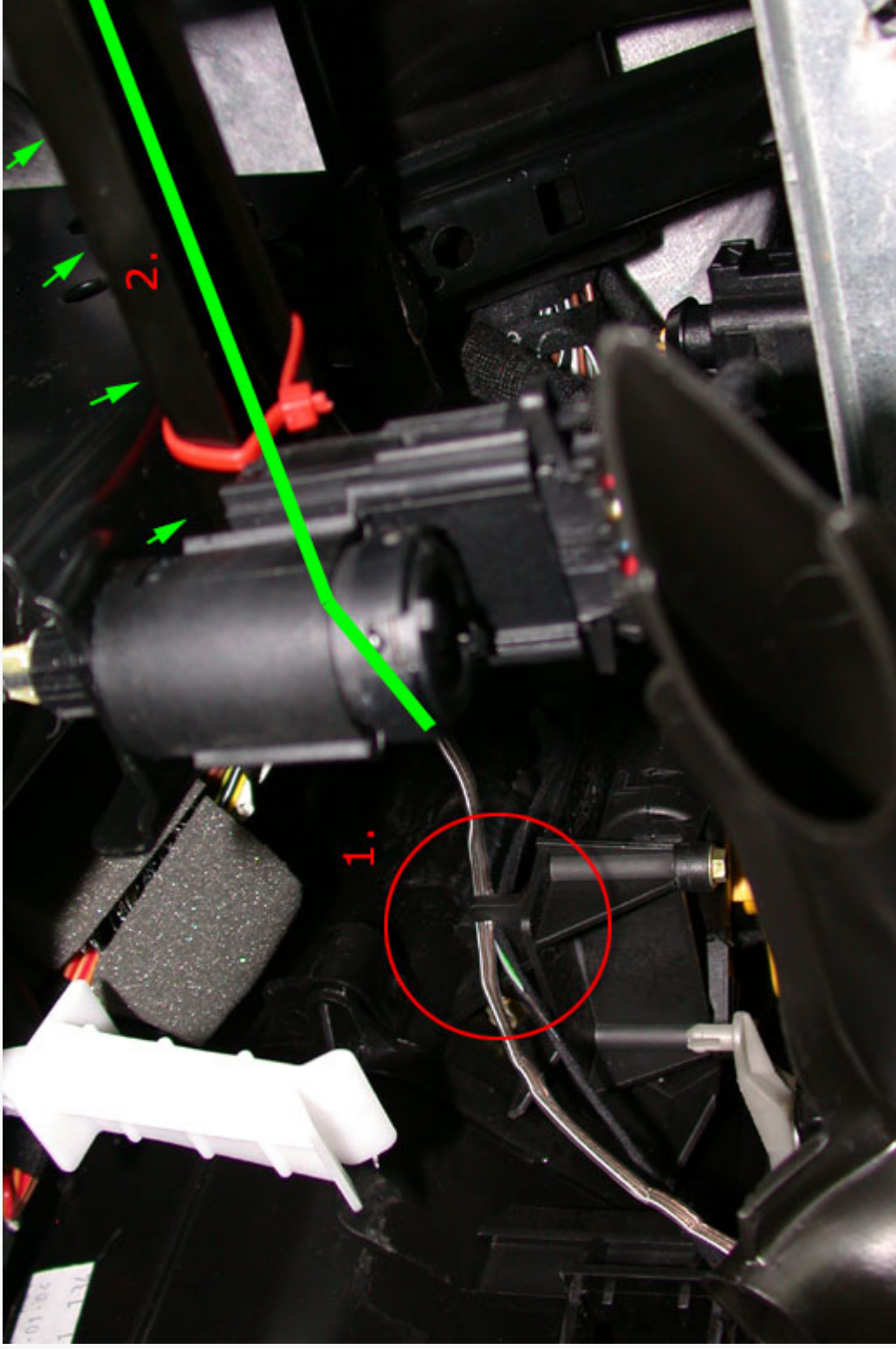
1. & 2. Back where you ran the wires up for step 4, go under the dash and run the wires up behind the paneling. you'll see this clip, which will allow you to run these wires very low-profile (in case the service-dep ever goes poking around). after clipping them in, run the wires up behind that round-thing, then up over the metal bar (I showed in green where the wires would be behind things and above that bar)

STEP 6 - SECURING WIRES
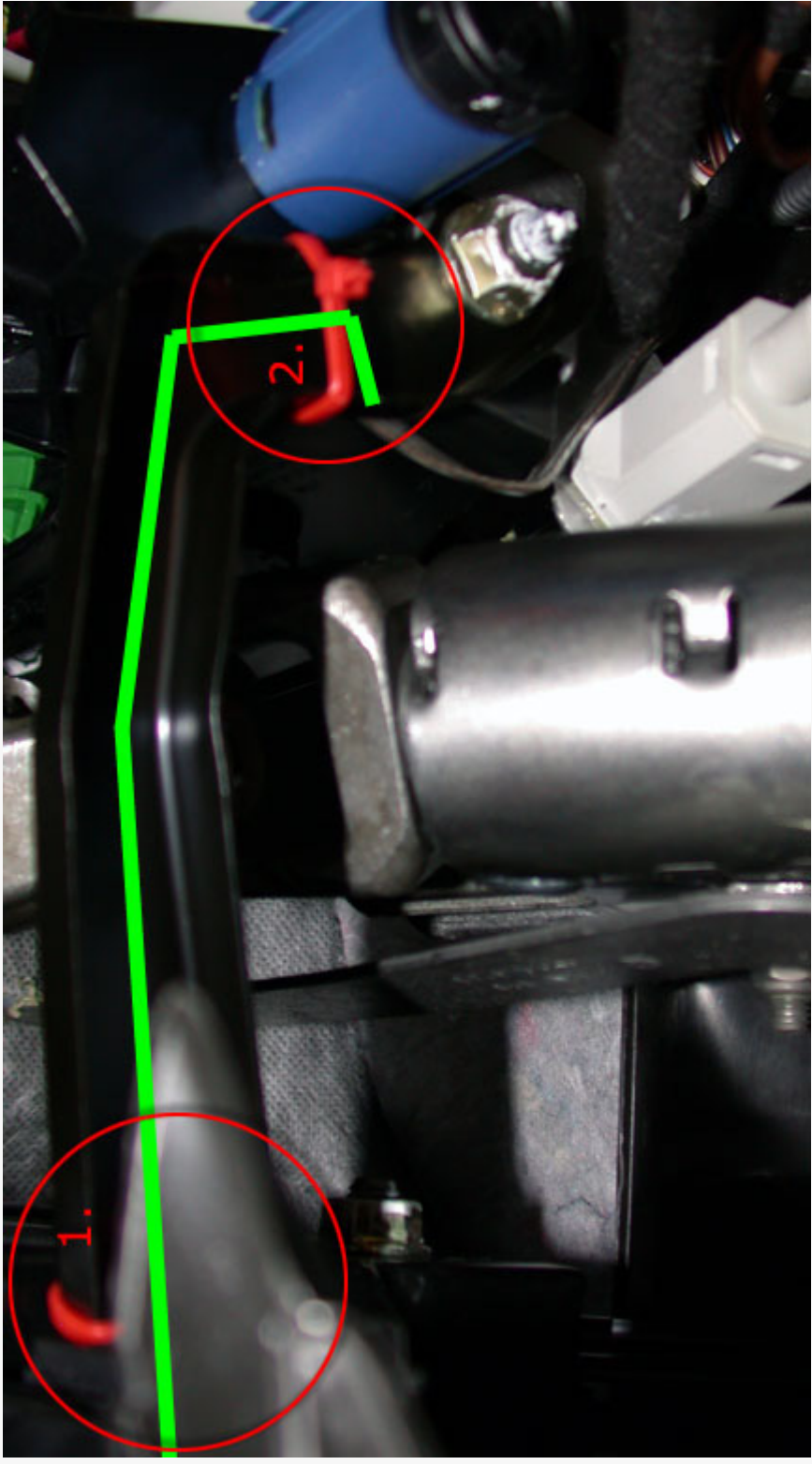
1. & 2. Notice the bar we ran the wires on top of in step 5; we're now going to zip-tie those up there for two reasons: first we don't want them getting caught in any of the moving parts back there, second we want them hidden from techs (notice how the green lines represent where the wire is above the bar)

STEP 7 - RUNNING WIRES
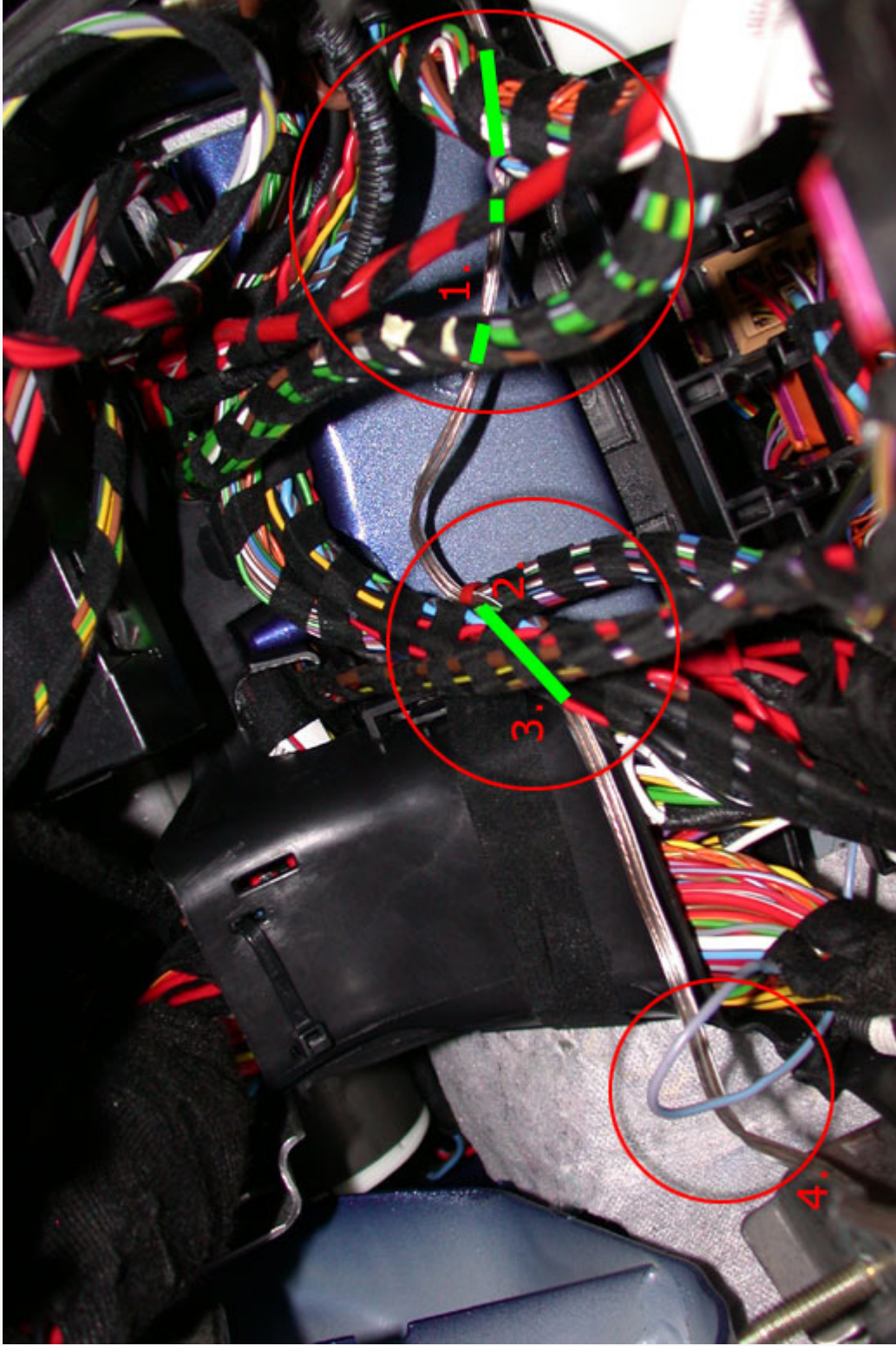
1., 2. & 3. This photo is from looking up while lying under the dash. starting from the right, run your wires up above the other sets (to conceal them and keep them out of the way)
4. Bring your wires down right next to the Grey with Blue-stripe wire

Connect your ground wire to a metal contact (preferably the frame). To the left and up from the Grey+blue wire, I found three bolts going into the side-frame. I completely removed the very top one (more-discrete), wrapped the stripped ground-wire around it and then screwed it back into the frame.

Connect your +12V wire the post illustrated above. I would recommend trying to keep the connector+wire discrete and possibly hiding it under the other connector.
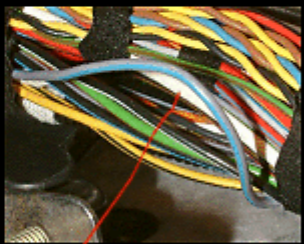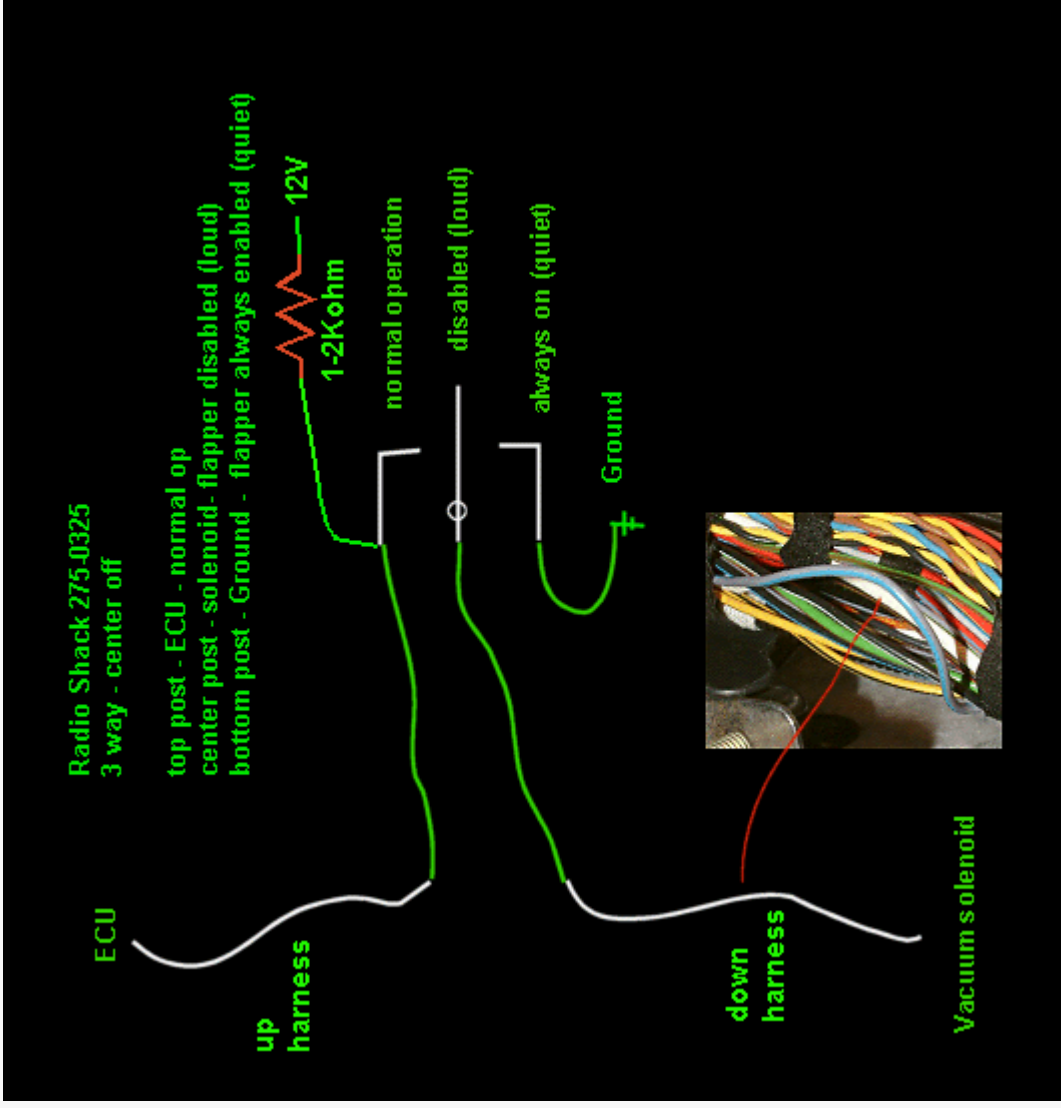
As 'g60racer' has shown with his multimeter, this point is the backside of fuse #34.

*Quote, originally posted by **encrypted** »*
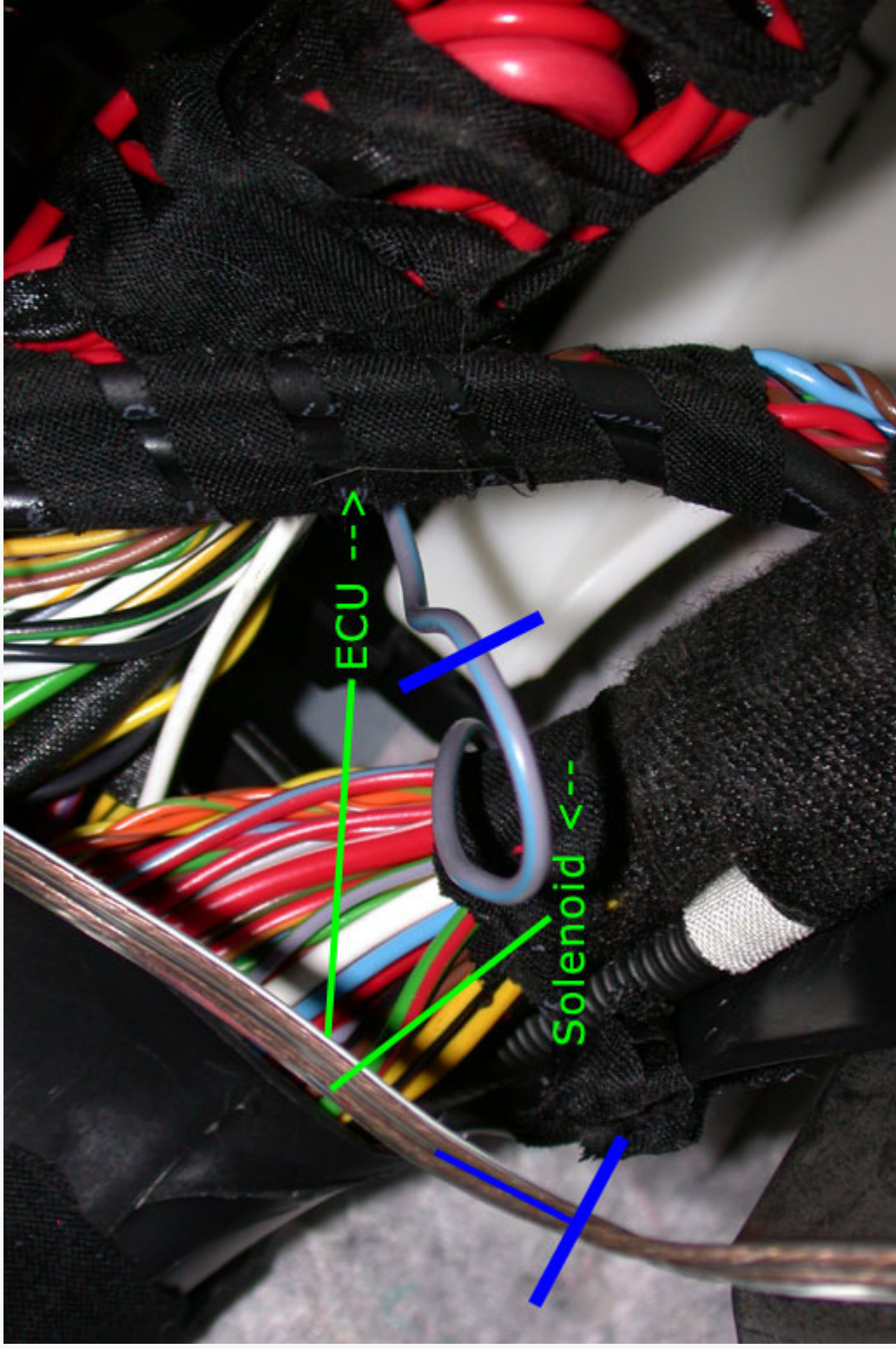
CHOOSING A RESISTOR - 1K resistor - use 1/4W rated or higher (power draw ~0.14 W) OR - 2K resistor - use 1/8W rated or higher (power draw ~0.07 W). You have plenty of leeway - I used 2.7K. The bigger the resistor value, the smaller the dummy load. Just pick a resistor with a conservative wattage rating (power consumed by a resistor is V*V/R, where V=12 in our case). - **SOURCE**

This is the newest-revised schematic ian drew up (thanx man). in case you don't want to run the +12V line, the wire-line (with 1-2Kohm Resistor above 'normal operation') is optional. if you don't run that, the ECU will throw a code (which clears after a bit if you put it back into norm.operation mode)

ECU

up harness

Radio Shack 275-0325
3 way - center off

top post - ECU - normal op
center post - solenoid - flapper disabled (loud)
bottom post - Ground - flapper always enabled (quiet)

12V

1-2Kohm

flapper disabled (loud)

flapper always enabled (quiet)

normal operation

disabled (loud)

always on (quiet)

Ground

down harness

Vacuum solenoid

ECU -->

Solenoid <--

See-Above. Notice in my picture, how the Grey+blue wire goes to the left into thick bunch of wires, and to the right into another smaller set of wires. The thick set of wires runs to the solenoid; the smaller set runs to the ECU (feel around, you'll see how it goes down towards the components.) Pull as much slack as you safely can from the Grey w/ Blue-stripe wire, then cut it in the middle. On my Switch wires, one side is marked with a white line; I connected the white line wire to the ECU side -- twisted it together, in prep for soldering. I connected the solenoid side to the non-white stripe wire, then twisted the spiced ends together. next, I thick paper down to protect the insides of the .:R from solder drippings. I then applied flux to both twisted wire sets, and soldered them. Wrap the soldered wires with elec-tape to protect them from shorting *(or, if you're familiar with heat-shrink, you could have put a piece on the wires before soldering, connected them, slide it back down and shrunk it with a lighter ~ if you're so inclined; elec-tape is easier)*

was unpainted

2. 1. 4. 3. 6. 5.
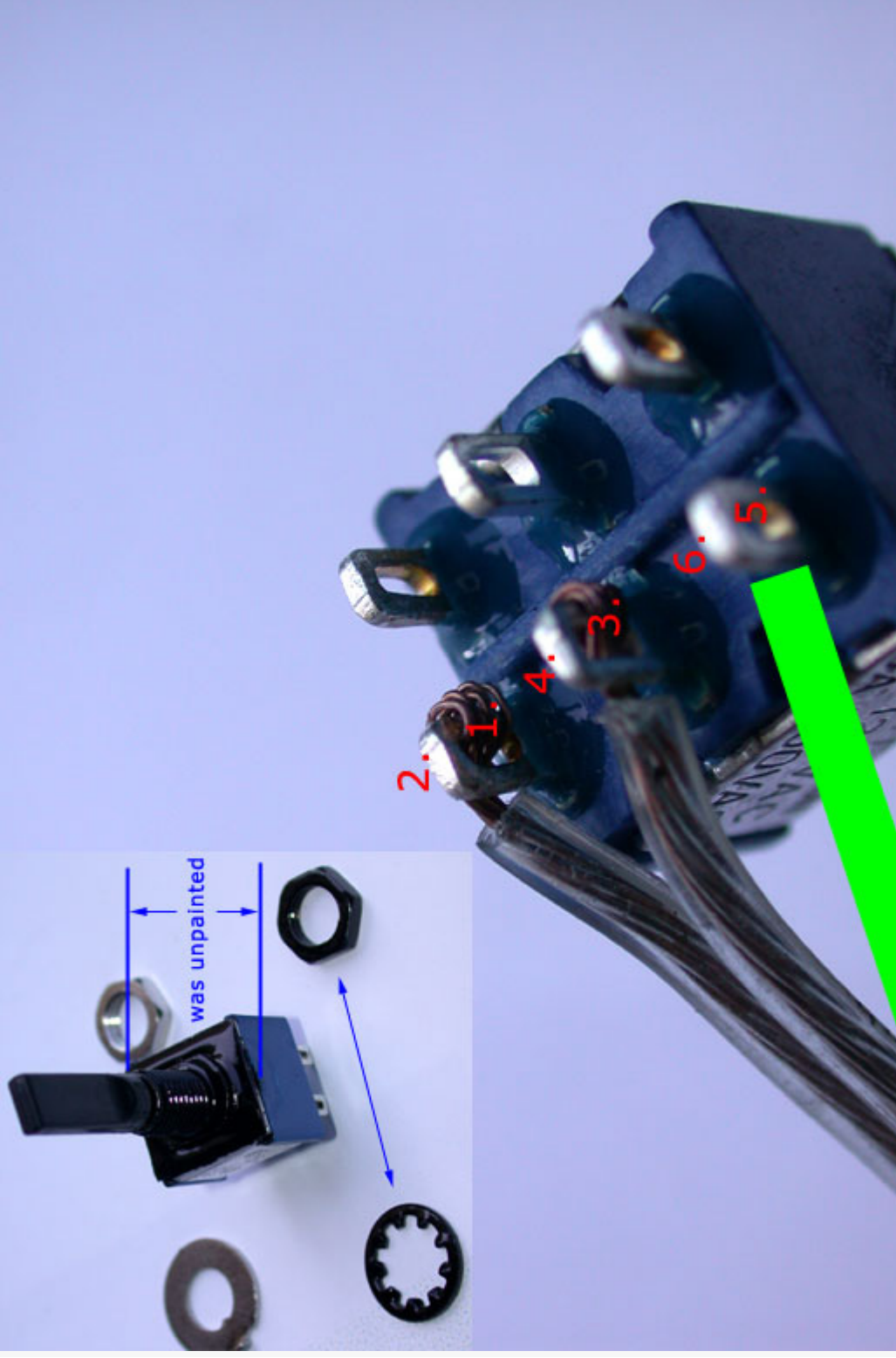
See-Above. I wanted a switch with a black-toggle, to keep it low-profile. the screw-shaft and bolt were metal-color, so I taped off the switch and painted both. **1., 2., 3., 4., 5. & 6.** First thing you need to attach the switch wires and the ground line. Since the switch is upside-down, you'll be running the wires in from the left side, then when you flip it over they'll come out to the right. Run the wire in from the left side through the hole, then using needle nose pliers wrap it around to the left (away from pole-2). Do this for the second switch wire, on the middle pole; also do the ground line the same way (my photo does not show it, so I represented it with a green line.) Warm up your soldering iron; once it's hot dip the tip in some flux to prep it; also flux around each of the three poles. This will be the best way to solder these poles without melting the inside of the switch: Turn the switch so that sides '2., 4. & 6.' are facing upward. Place the rosin-core solder on side '2.' and then touch side '1.' -- remove the iron as soon as the solder on side '2.' melts -- do a half/small dot (solder runs towards heat, so this will pull it through the wiring/pole). While it's still facing up, do the same with sides '4. & 6.' When those three pole-sides are done, flip the switch over so you can see sides '1., 3. & 5.' (which should be unsoldered); continue the same method, resulting in both sides being lightly soldered with minimum heat *(by quickly touching then removing when melted, you lessen the chance of ruining your switch)*
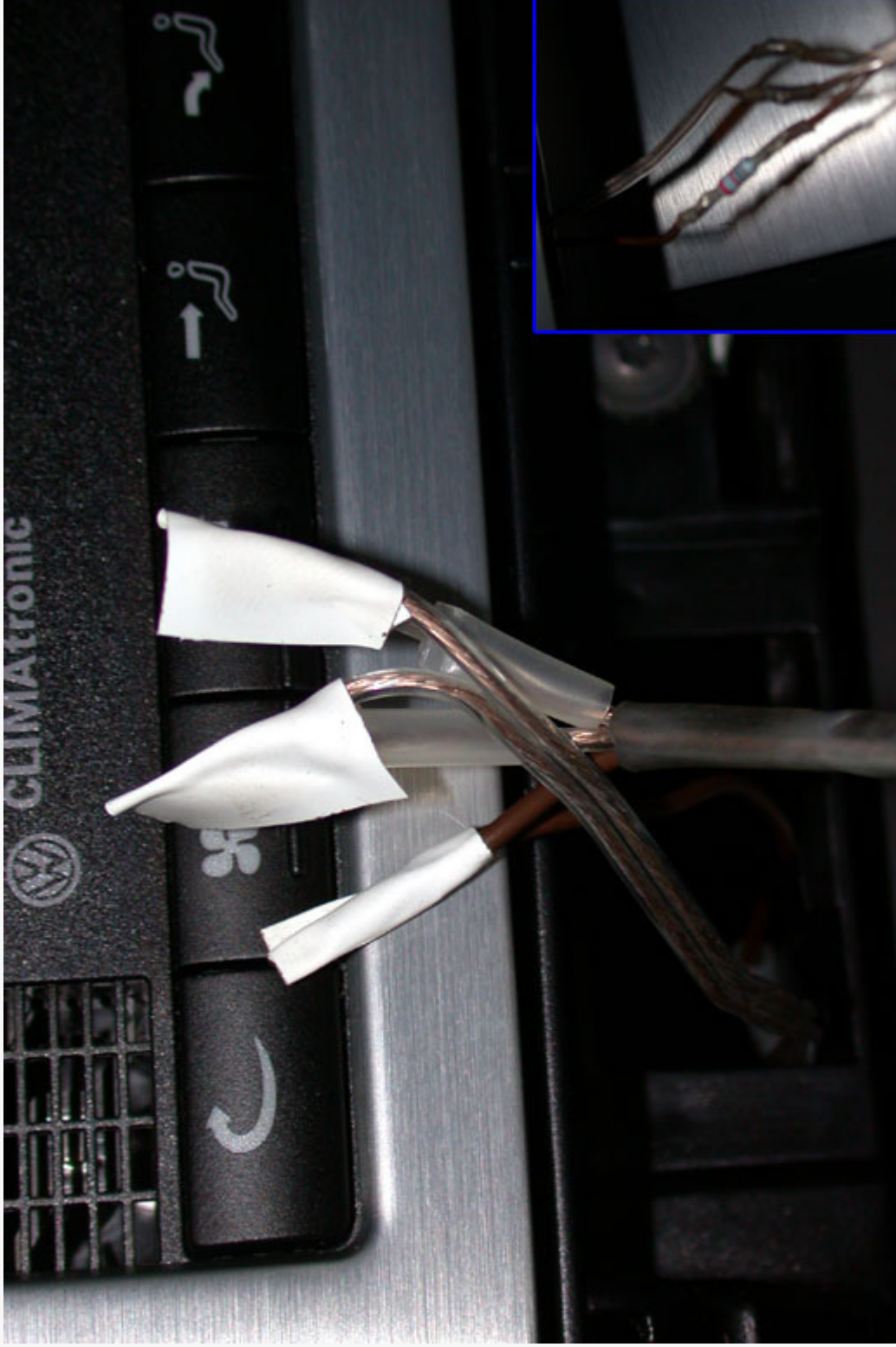
1. I used some hot glue to cover the poles after soldering.
2. I used heat shrink tubing to consolidate the wires, which isn't totally necessary, but will help reduce the wear on the back of the switch (if you take that panel back off, etc.) If you're not using heat-shrink, you could simply elec-tape it

STEP 12 – TESTING WIRING

See-Above. First thing you'll notice is that there are not four wires above -- this is my original photo, before the +12V resistor was proved to work. (In the above photo, i tested the resistor on the ground-line, which did not work. However, it Does work as illustrated by ian in the schematic above --- DO THIS 😊) *I added this testing stage, because you'd be really bummed if you put it all together just to find something wrong and have to take it apart again.* After testing, the 'Up' (default-mode) worked fine, the 'Middle' (always-loud) worked fine and the 'Down' (always-quiet) worked fine. I then took off the test-tape, soldered all wires and wrapped them (heat shrink shown in photo, which is what I used under the final-taping in the next step, but if you don't have it, elec-tape will work fine.)
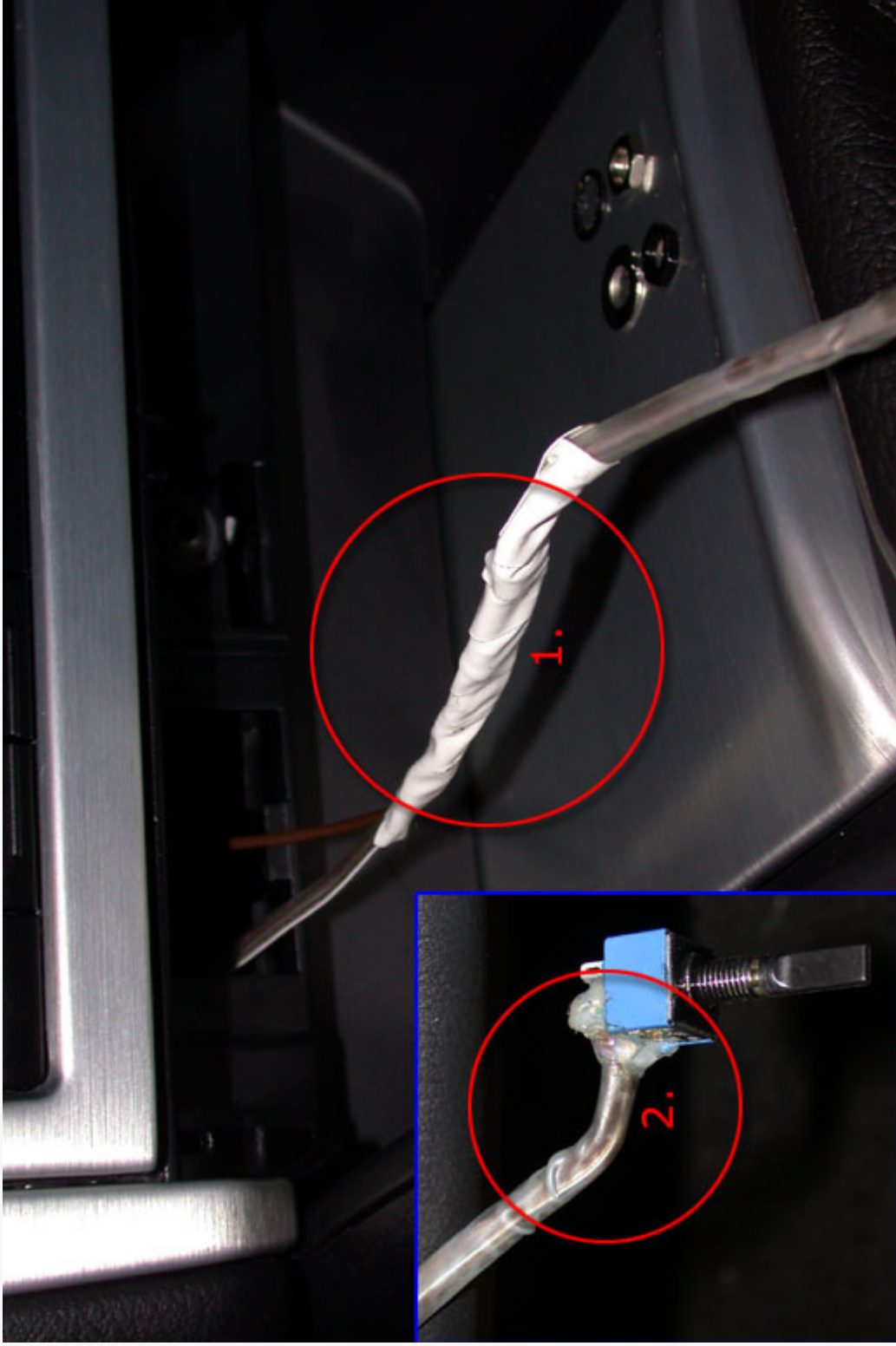
'g60racer' pointed out a good way to set this up!

One other note for a clean install: I used insulated male-female quick disconnect spade terminals to hook up the switch to the wiring I ran into the dash, in case I need to remove it for any reason (short shifter install, etc) I don't have to cut wires and re-solder it.

STEP 13 – PREPPING WIRES

1. First, I extra wrapped the lines together to add extra strength where the soldering was.
2. I bent the wires from the side towards the back of the switch, to give it clearance for installation of the panel.

STEP 14 - DRILLING THE PANEL

See-Above. On the opposite side of this panel, you'll find a metal guide on the top. You want to use a very small drill bit to make a pilot-hole from the back side; line up the hole with the guide, and half way down from it. Flip the panel over and use your larger bit (same diameter as switch's thread) to drill through the pilot hole from the front side -- once it's through, gently wiggle the bit to remove rough edges.

STEP 15 - SWITCH IN PLACE

See-Above. Push your switch through the hole, with the wires pointing to the right so they easily go through the hole behind there. Use some needle nose pliers to tighten up the switch-bolt that holds it in place (see the black bolt from step 9 -- I didn't use the front lock washer.) Make sure it's straight, and tighten that sucker up as much as you can. Pop the bottom edge of the panel in first, then the top. YOU'RE SET :)CONGRATULATIONS!

Best of luck to everyone!!! For general info, check out the original post; you can ask questions here as well or IM me if you need help

I RECREATED THE PDF for Printing the Instructions!!!
[This is the latest version of this walk-through to use while working]
Modified by gabedibble at 1:32 AM 8-13-2004