



JB N20/N26 Stage 1 & JB4 Install Guide

Last Updated:6/28/2015

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THIS PART IS LEGAL FOR USE ONLY IN COMPETITION RACING VEHICLES AS DEFINED UNDER CALIFORNIA LAW, AND IS NOT LEGAL FOR USE IN ANY OTHER MOTOR VEHICLE. California law defines a "racing vehicle" as "a competition vehicle not used on public highways." (Calif. Health & Safety Code 39048) This part may only be used on competition racing vehicles operated exclusively on a closed course in conjunction with a sanctioned racing event. Competition-only motor vehicles may not be driven to a racing event on a public highway and must be transported on a trailer or other carrier. USE OF THIS PART IN ANY OTHER VEHICLE MAY SUBJECT YOU TO FINES AND PENALTIES FOR VIOLATION OF FEDERAL AND/OR STATE LAW, WILL VOID YOUR WARRANTY FROM BURGER MOTORSPORTS, LLC, AND CAN VOID YOUR VEHICLE'S WARRANTY. It is your responsibility to comply with all applicable federal and state laws relating to use of this part, and Burger Motorsports, LLC hereby disclaims any liability resulting from the failure to use this part in compliance with all applicable federal and state laws.



Tools required:

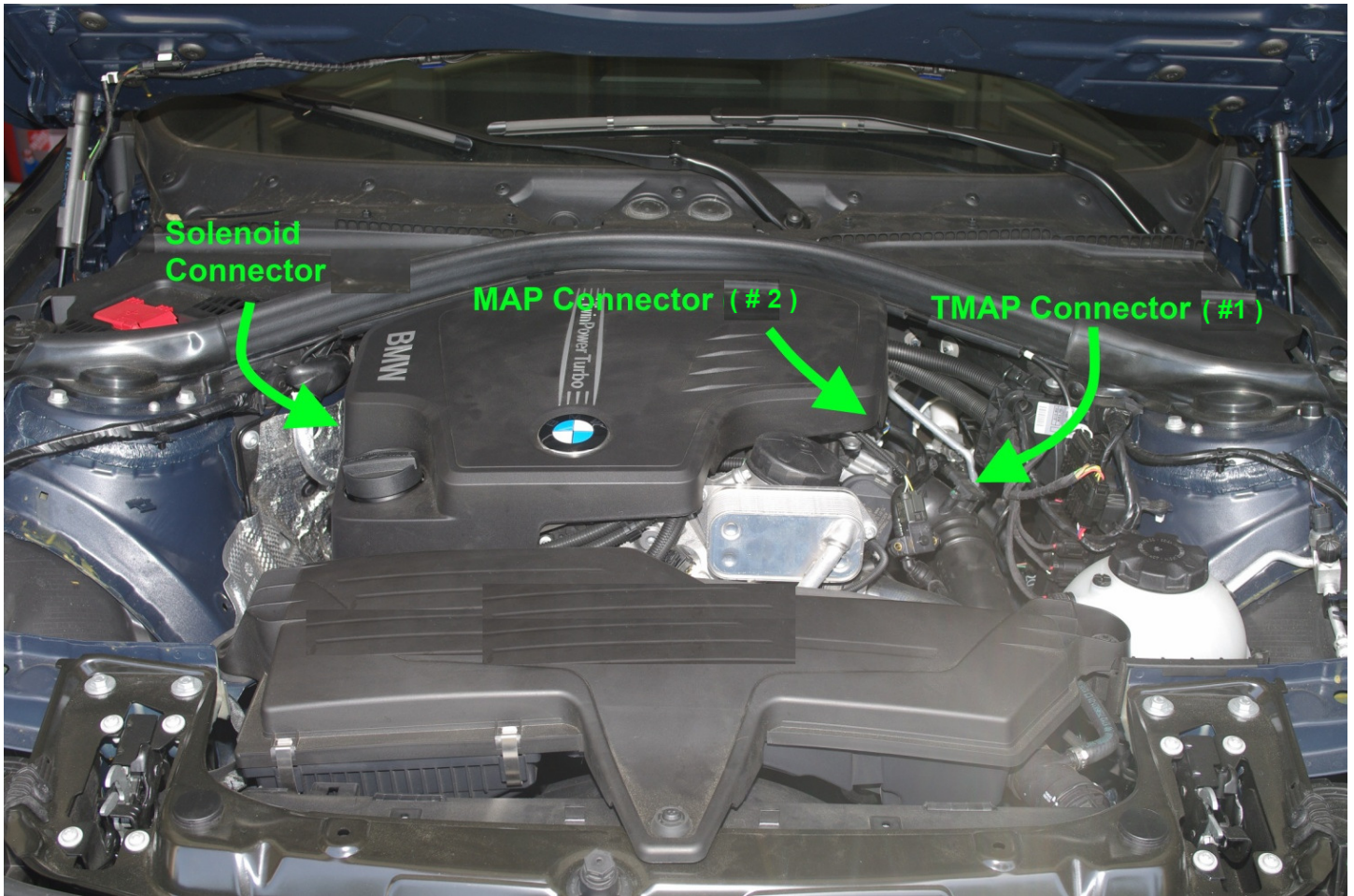
10mm & 1/2" socket

T50 (torx) bit

Small flat head screwdriver

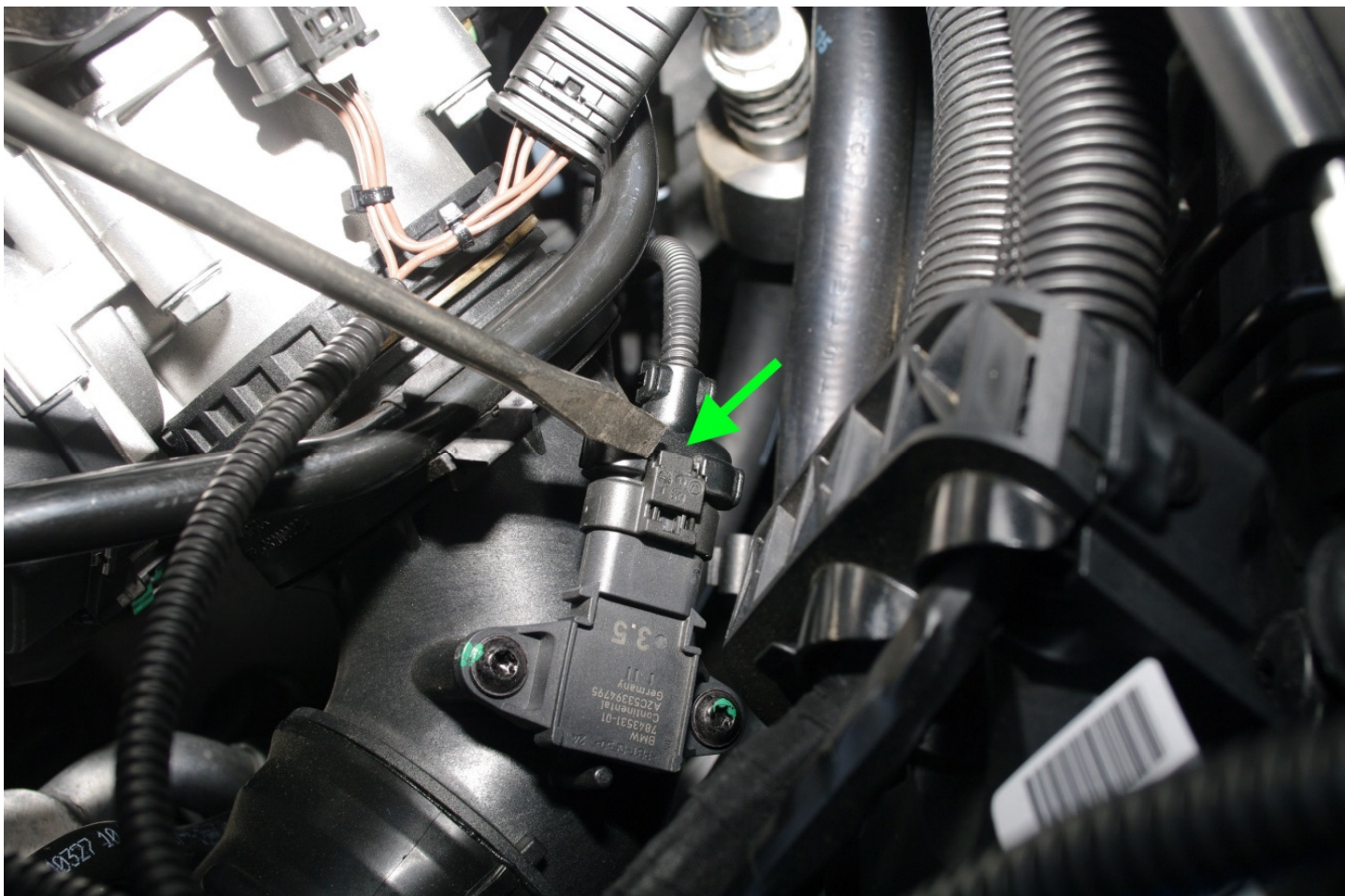
Before starting any electrical work always disconnect the negative battery terminal in the trunk. Failure to do so may result in ECU damage. Never disconnect the piggyback box, harness, or any wires while the battery is connected.

Open your hood and familiarize yourself with the location of the sensors you will be intercepting during the installation.



1) TMAP sensor, rainbow patch.

Locate the TMAP connector (#1) on the charge pipe.

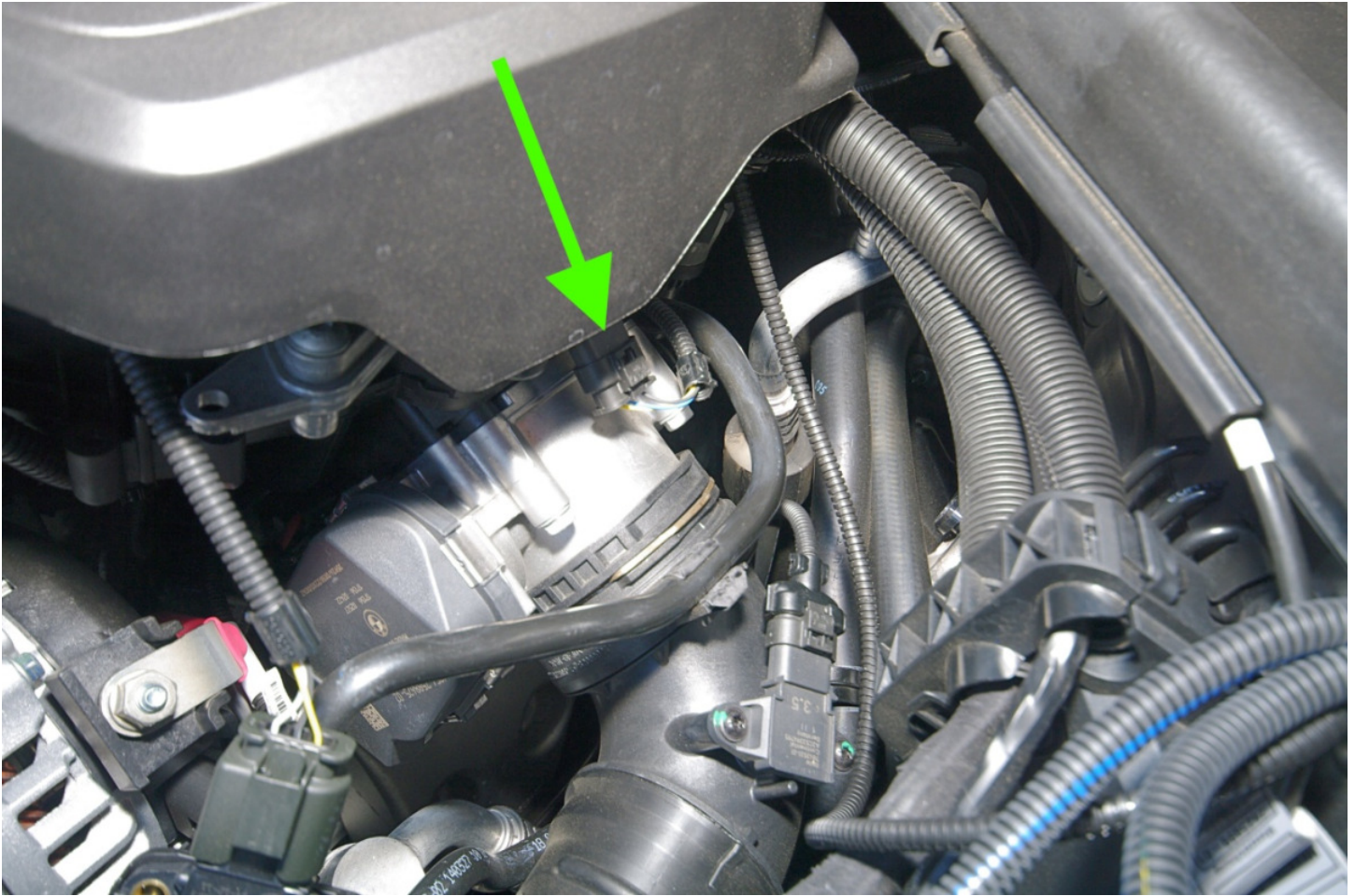


Push lightly on the release clip to release the connector from the sensor. Do not pull directly on the wires. If the connector is stuck using a small screwdriver to gently lift the tab up from the back side (closer to 3.5 numbering) can help.

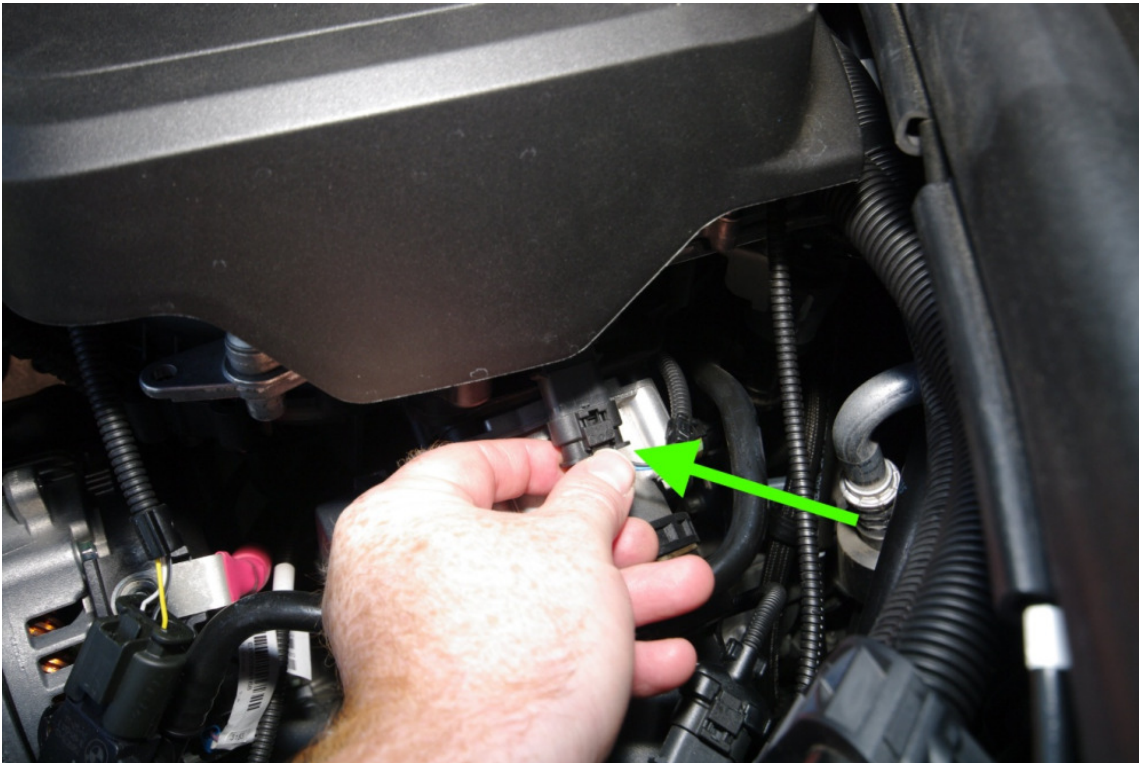
Plug the JB patch with rainbow wires in to the sensor and plug the OEM plug you just removed into the JB rainbow patch making a complete circuit.

2) MAP sensor, brown patch.

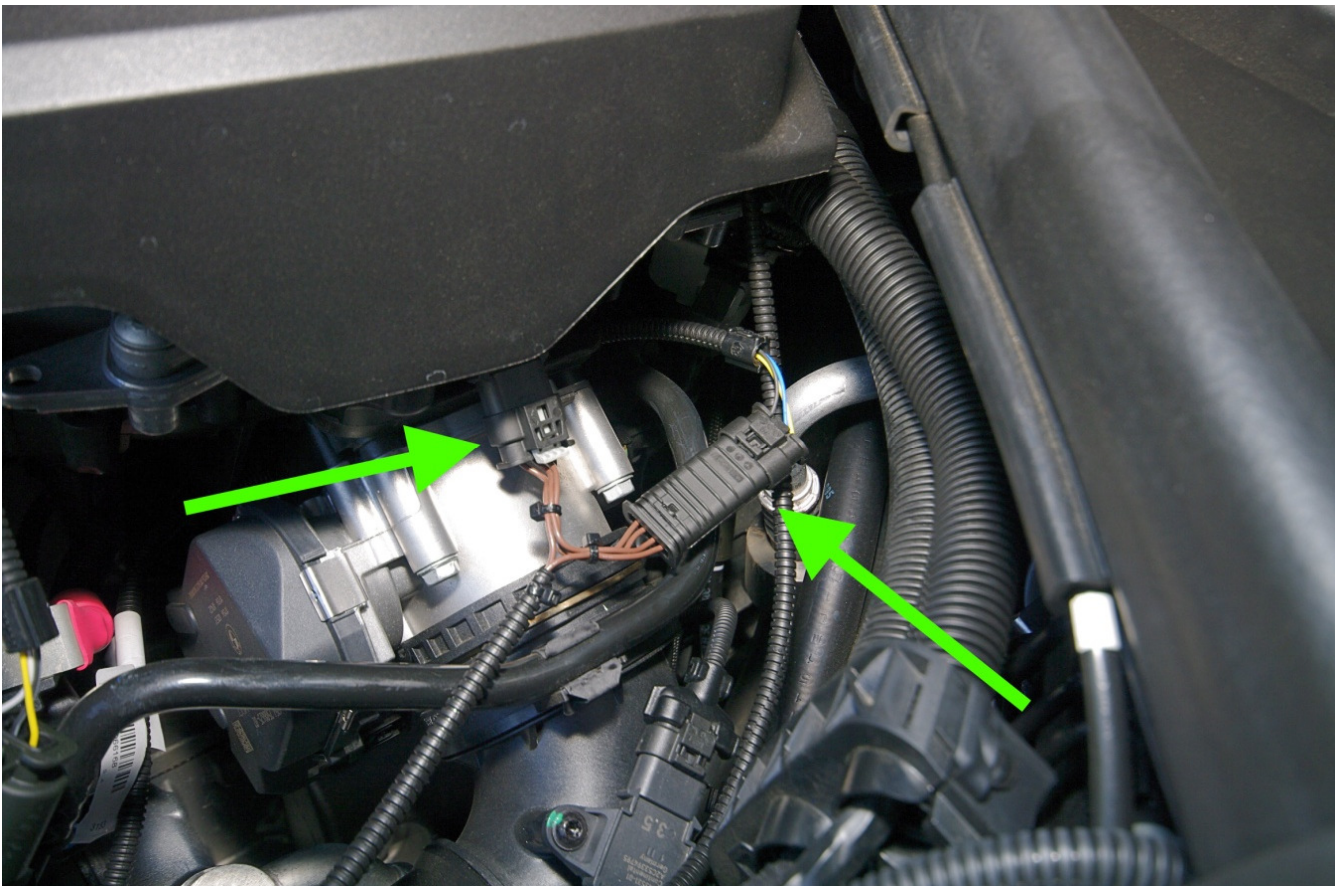
Locate the MAP Connector (#3) near the throttle body (green arrow).

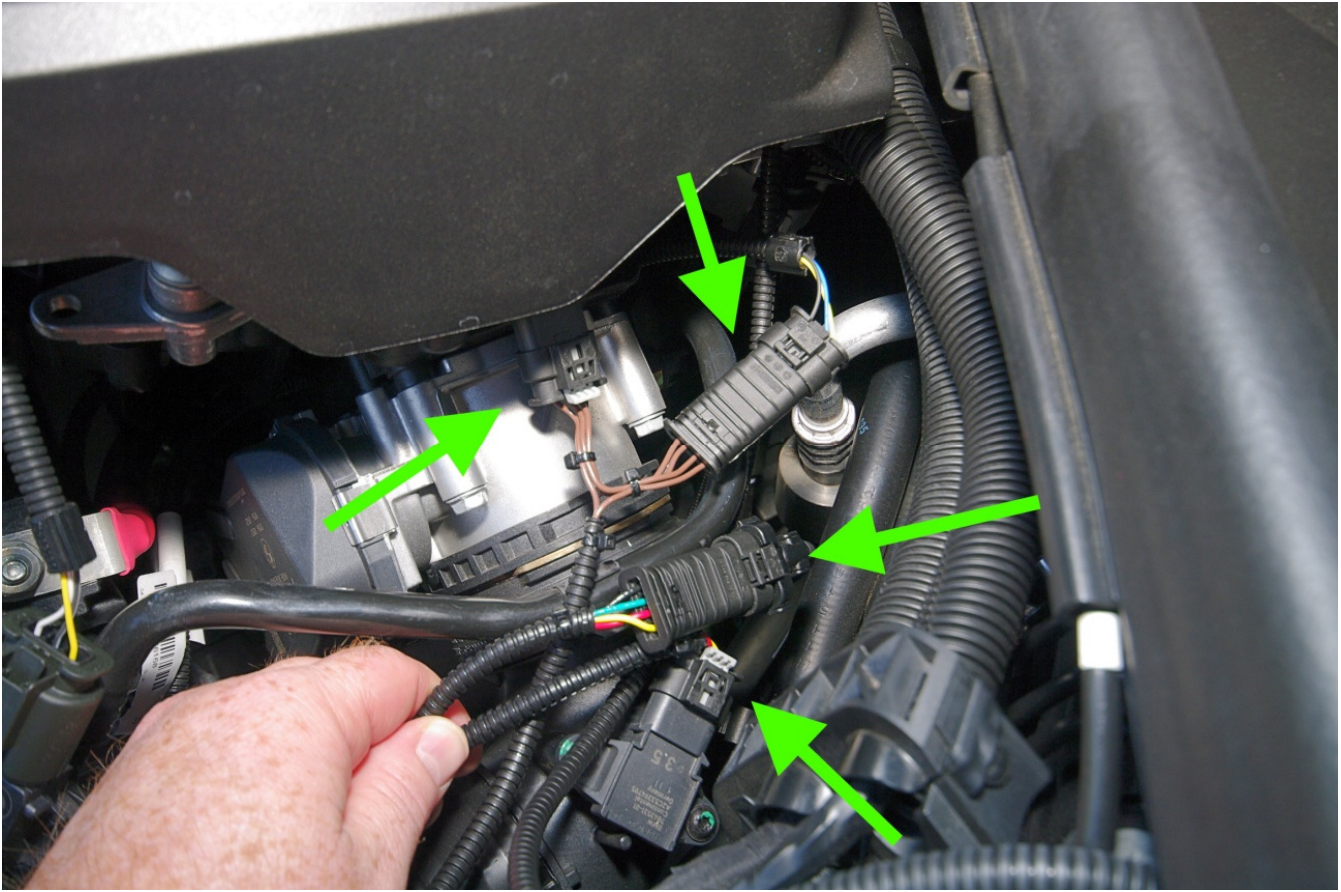


Press and release the clip as you did in the first step.



Once removed, locate the connector pair with brown wires on the JB harness and plug the small connector into the MAP sensor as shown. Connect the large connector from the harness to the factory harness connector as shown below. Please note the orientation of each plug.





3) MAF, Purple patch. Note, this patch is no longer used or included in harnesses. If you have an older harness with the purple patch you can cut it off the harness or tuck it out of the way.

4) Boost solenoid, blue patch, JB4 only. This harness will be installed on any models that are equipped with a pneumatic solenoid. Models not equipped with a solenoid as shown in the photo will leave the blue patch tucked out of the way and skip to step 5. Generally models 2014 and newer will not use this connection.

If your vehicle looks like this,

Please continue.



If you are missing the solenoid you have an electronic wastegate (EWG) and will skip this step. The blue patch is not used for your model.

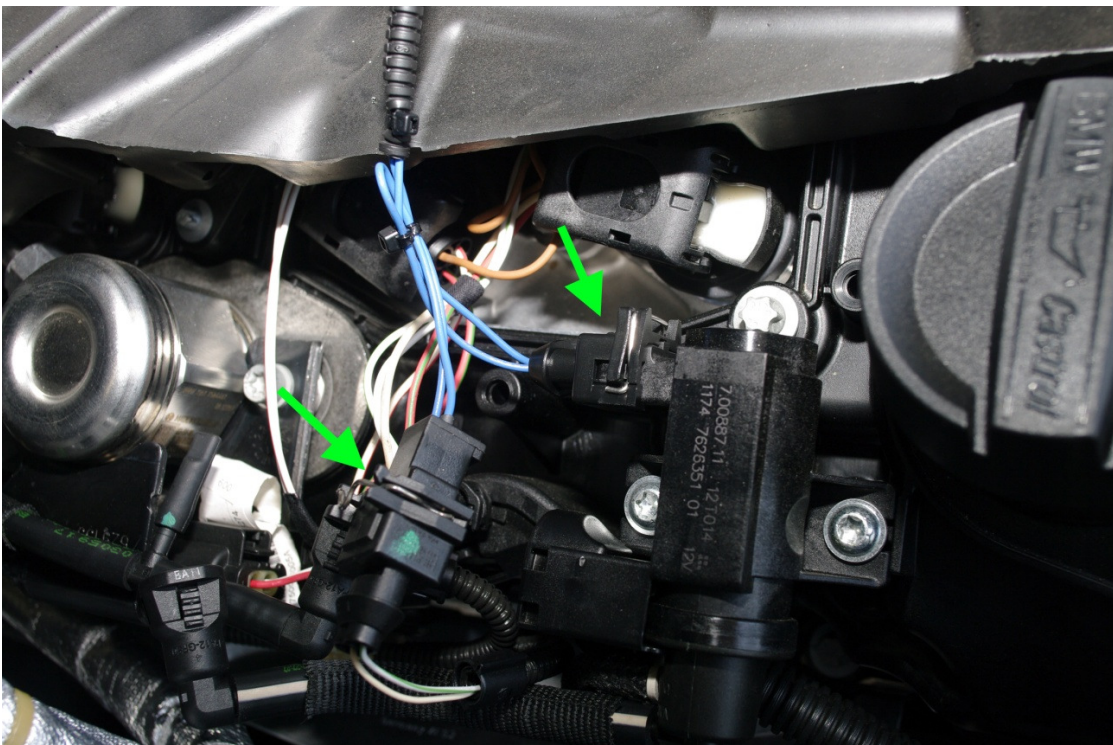
The solenoid is located under the engine cover. You'll lift it up to access the connection.



Push down on the metal retaining clip as shown and slide the connector back. Do not pull directly on the wires, make sure to pull on the connector.



Lay the JB harness over the engine and locate the connector pair with blue wires. Plug the female connector on the JB N20 Stage 1 harness over the factory connection as shown, making sure that the retaining clip clicks into place. Then, plug the factory harness connection you removed in the last step onto the male connector on the JB harness, making sure that the retaining clip clicks into place.



Now route the wire harness over the back of the engine cover area as shown below.



Newer JB4 harnesses also include a 3-position FLEX FUEL wire which generally only needs to be installed on 320i & 520i installations, or those who plan to use E85 mixtures down the road.



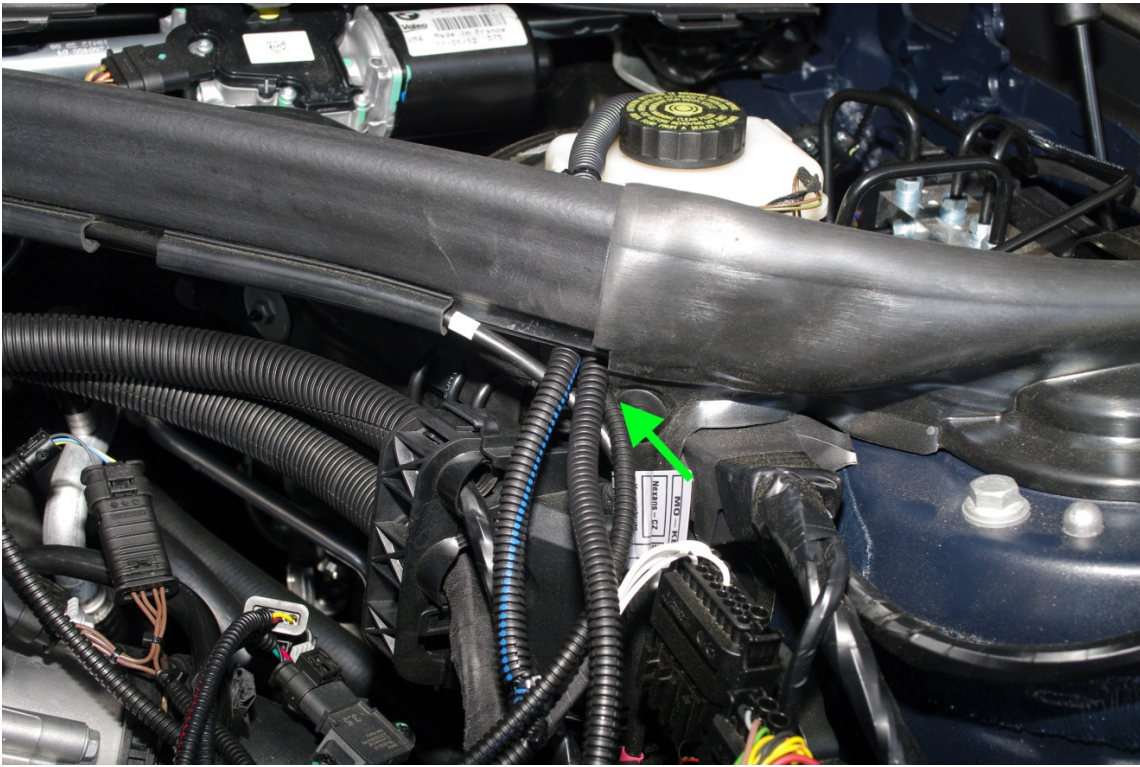
Step 5: Mounting the box. Now that we've connected the basic connections we need to place the box under the driver side plastic cover as shown. Locate the plastic cover over the brake booster as shown. Note the small ring near the side of the vehicle.



Pull up on the ring and pull the plastic cover forward to remove.

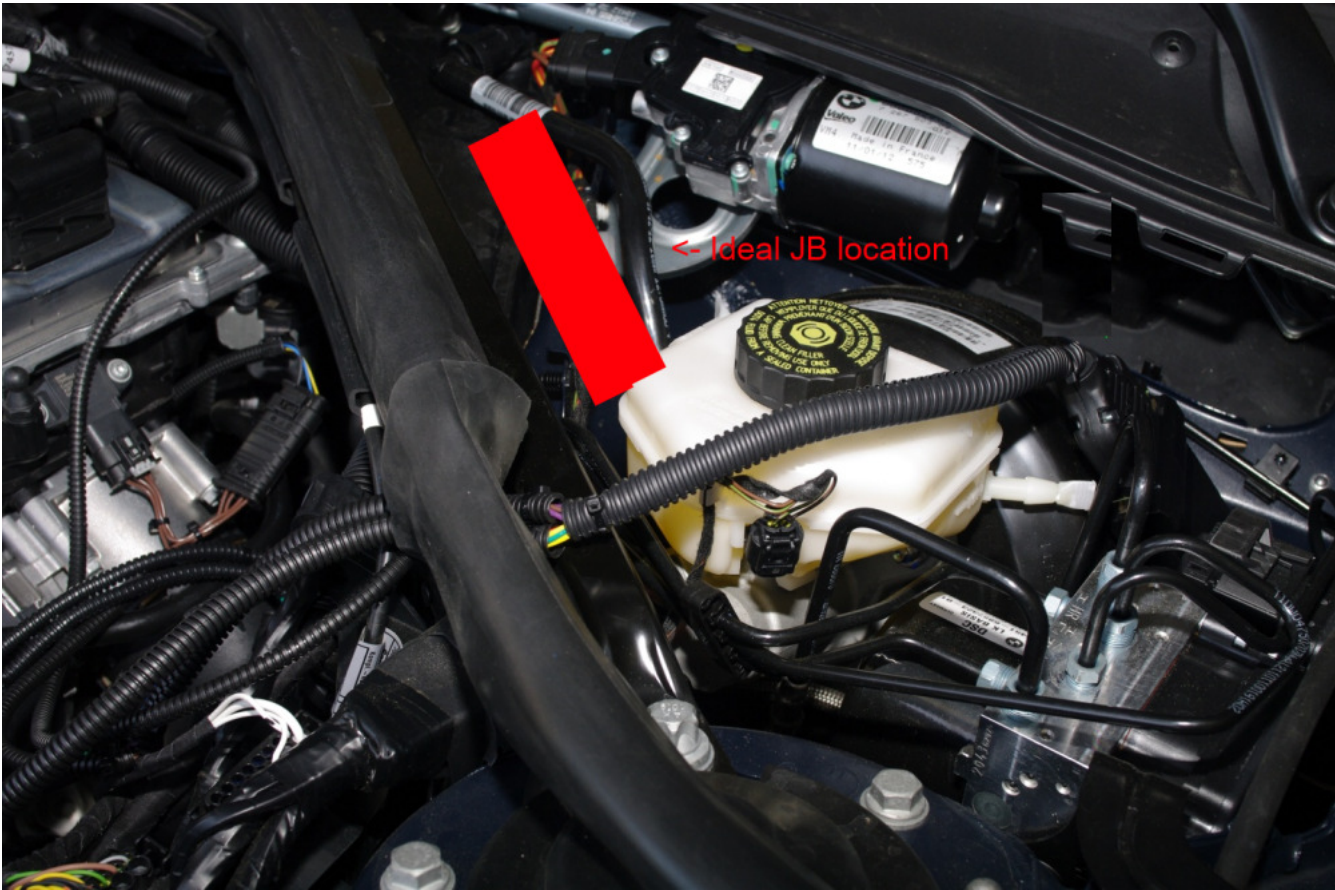


Now run the JB wire harness between the split in the weather seal and replace the weather seal as shown. The portion of the wire harness with the AMP cover on the connector should now be near the brake booster.



Find the JB control box and connect to the JB wire harness as shown, using a small screwdriver to secure the small screws as shown. If you have opted for the optional USB cable for future software updates you can connect that to the small connector at the opposite side of the control box at this time.

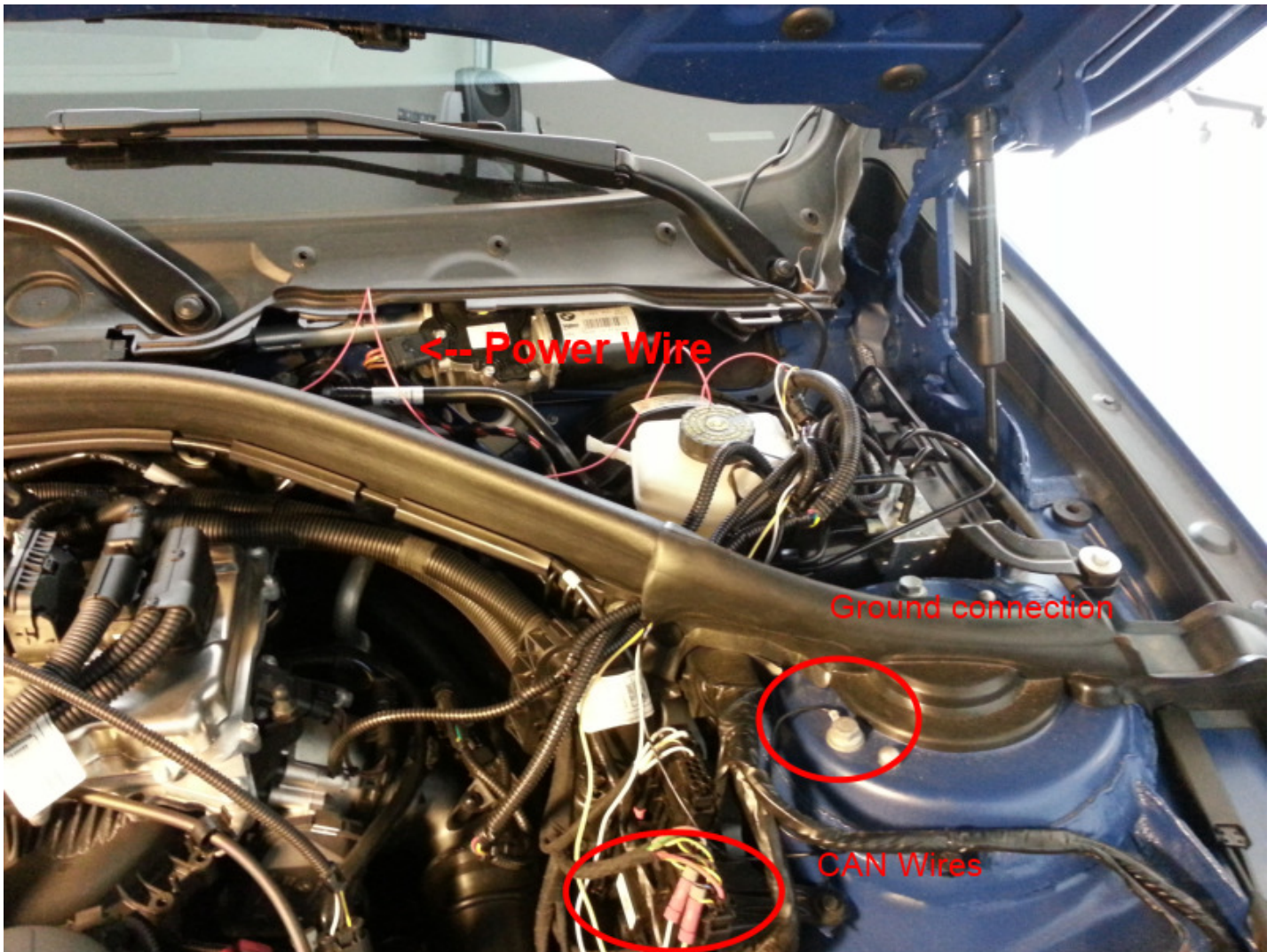
Route the JB harness and control box to a location that allows you to replace the cover. Note that the box is not water proof and should be positioned in such a way under the plastic cowl cover to keep it as dry as possible. Also take care to ensure it's not placed in the path of the windshield wiper assembly.



If you are installing Stage1 then skip to step 7. If this is a JB4 system then you must also install the power, ground, and CAN.

If you have an older Stage1 system that happens to have these extra wires, do not install them. Tape off each wire and tuck them out of the way.

Step 6: JB4 only wires. Red, black, green, and brown.



For JB4 EWG models the JB4 no longer requires or includes a separate power and ground wire. If your harness does not have these then skip the steps for the red and black wires below.

The black wire is a chassis ground. Connect it to the shock tower using a 1/2" socket or other suitable chassis ground.

The red wire extends over to the passenger side and attaches to the power terminal under the red flip-top. You'll need a Torx-50 bit to loosen the terminal. The red wire should be routed under the plastic cowl covers so its out of sight.

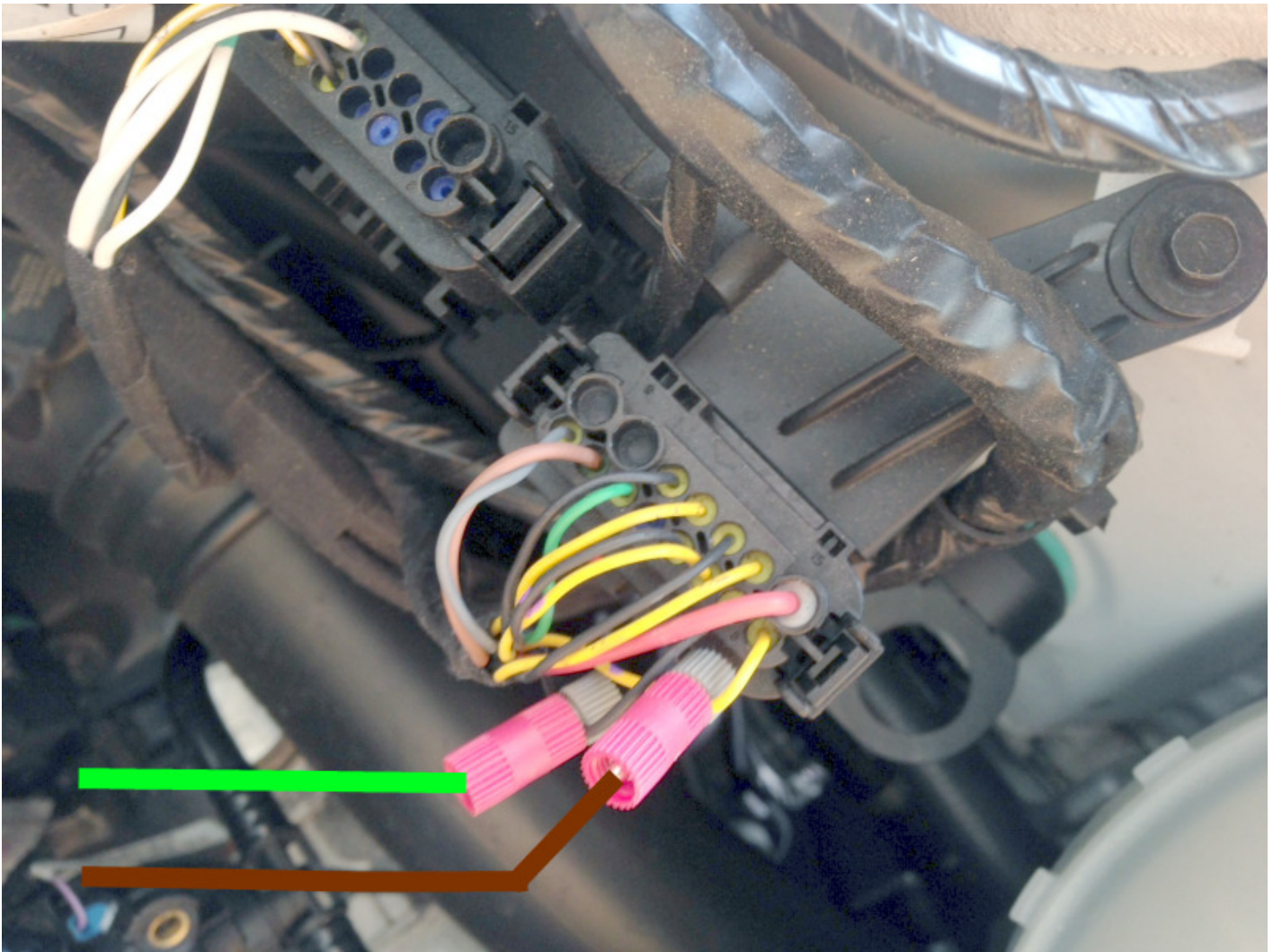


The green and brown wires connect to the CAN access terminal as indicated in the photo below. If needed peel back the harness tape holding the bundle together around 1" allowing more room to work with the wires. Review the directions for using the removable quick connections below.

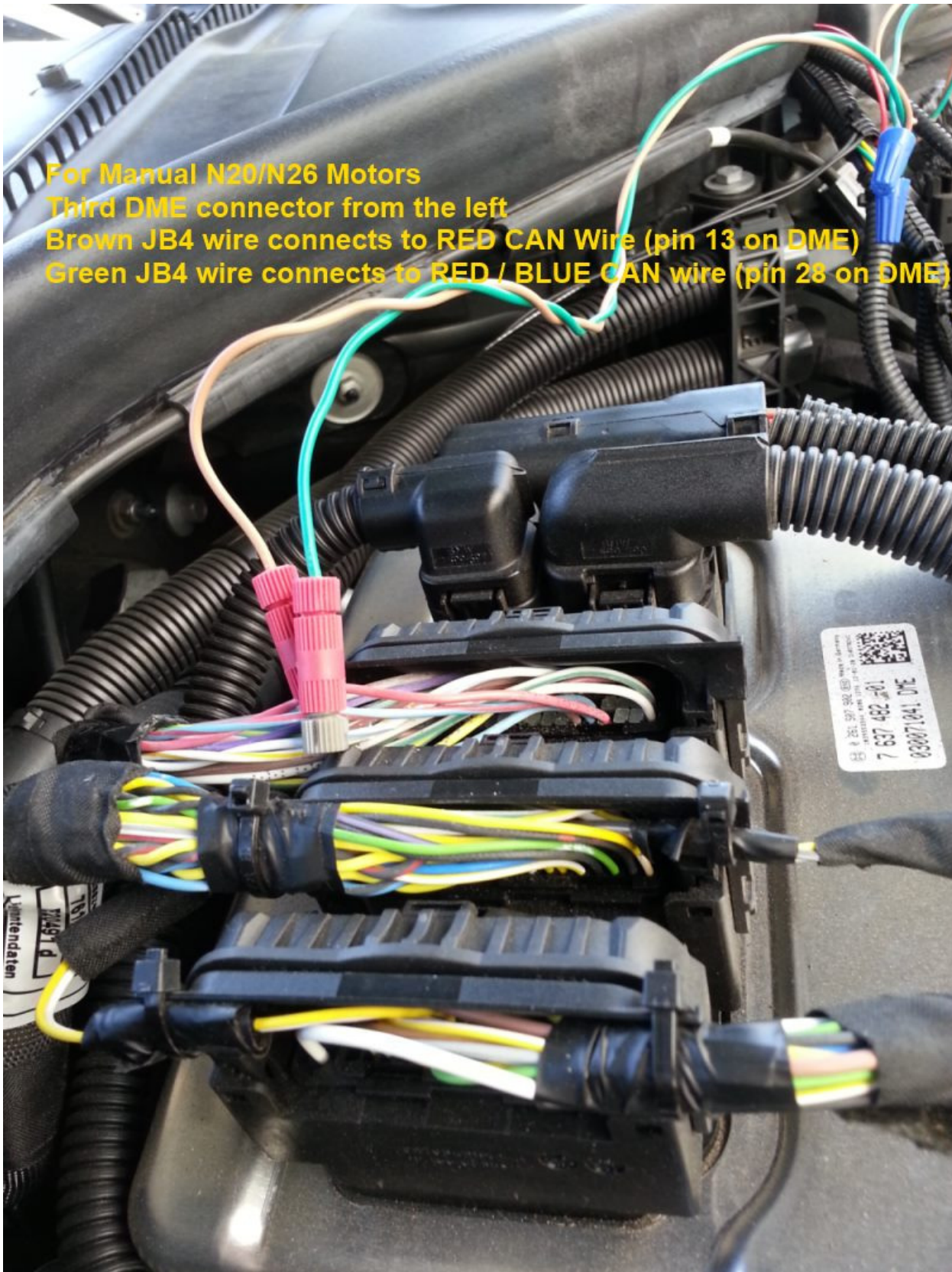
Using the included removable quick connects attach the brown JB4 wire to the yellow factory CAN wire right below the thick red wire as shown.

Using the included removable quick connects attach the green JB4 wire to the factory CAN wire immediately to the left of the yellow wire. This wire color varies by model but is generally black or black/blue. The factory CAN wires form a twisted pair and are always right next to each other.

*** 5 Series Models *** This CAN wire connector is located under the passenger side cowl cover and not in the engine bay. You will need to extend the CAN wires using wire nuts and 20 gauge stranded wires which we can provide to you if needed. Alternatively you can connect to the DME harness directly as shown below.



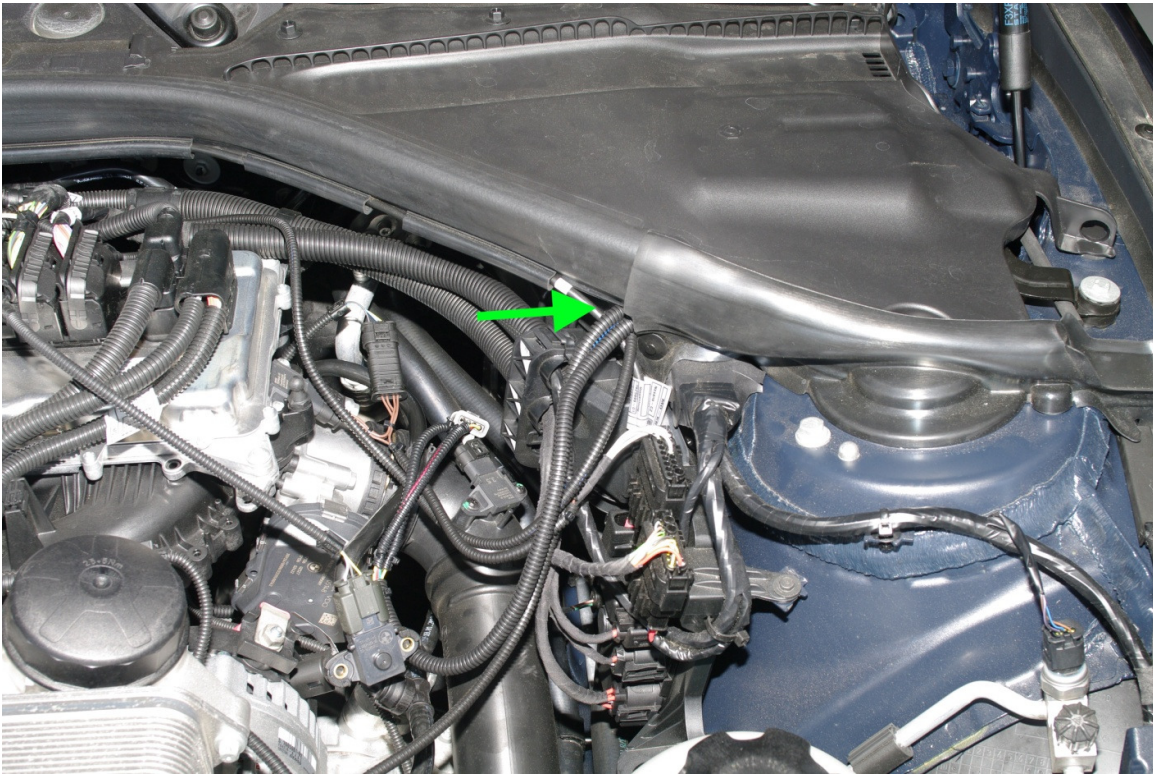
Note Manual transmission cars don't have the external CAN connector above so you'll need to tap the CAN wires directly at the DME which is located under the engine cover. Peeling back the connector tap or removing the connector from the DME all together will allow a bit more room to access the proper wires.



For Manual N20/N26 Motors
Third DME connector from the left
Brown JB4 wire connects to RED CAN Wire (pin 13 on DME)
Green JB4 wire connects to RED / BLUE CAN wire (pin 28 on DME)

7. Wrapping up.

Finally replace the plastic cover over the brake booster area as shown. Note the position of the harness near the weather seal.



Before closing the hood, reconnect your negative battery cable and start the car. If you receive a CEL (check engine light, picture of a yellow engine on the instrument display), double check each connection and the orientation of the connectors. If you're unable to see any problems, please take photos of the install, including each connector and email to jon@burgertuning.com for troubleshooting support.

Assuming the car starts and idles without a CEL, you can close the hood and trunk and your installation is complete.

Settings:

Stage1: This system is a single map and no software changes are required for any models.

JB4: This system is a multiple map system and the user can select between map (disabled) and performance maps using the volume control. Refer to the video on N54tech for specific map switch directions.

Software the JB4 system as well as any additional mapping information is posted here. For any additional questions on setup and settings please post in this thread:

<http://www.n54tech.com/forums/showthread.php?t=15536>