



BMS E Series – E70 N55 JB4 Install Guide Last Updated: 08/05/2020

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All Models: 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. Before starting scroll through the install guide and review the appropriate directions for your vehicle.

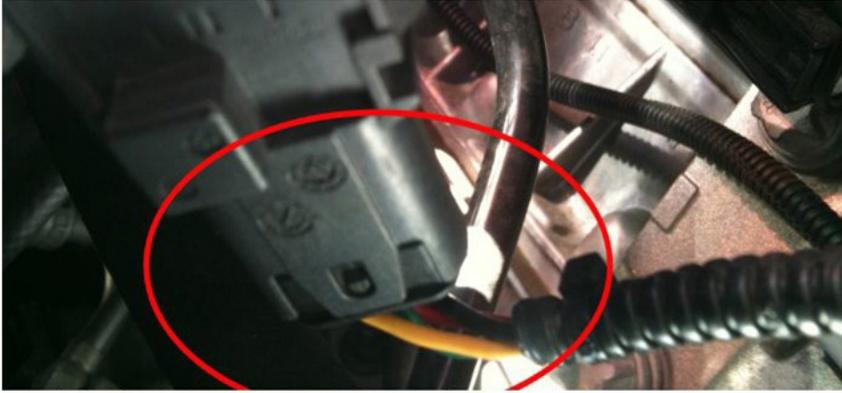
Once you reconnect the battery X-drive (all wheel drive) models will have an AWD/DSC warning that will clear itself as soon as you drive around the block. All models will need to reset their clock. With BMWs it often takes several attempts of saving the new time in the clock setup before it holds.

Before you start:

Verify you have the correct harness for your vehicle. Most 2011 models are harness Type A while most 2012 models are Type B. But early 2012 models can be either type so check your TMAP sensor to see if it has a smooth clip (Type A) or protruding clip

You must check and verify your TMAP sensor before ordering

If your TMAP looks like this you need to select (HARNESS A)



If your TMAP looks like this you need to select (HARNESS B)



TMAP SENSOR LOCATED ON THE RIGHT SIDE OF THE ENGINE BETWEEN THE AIR BOX AND STRUT TOWER

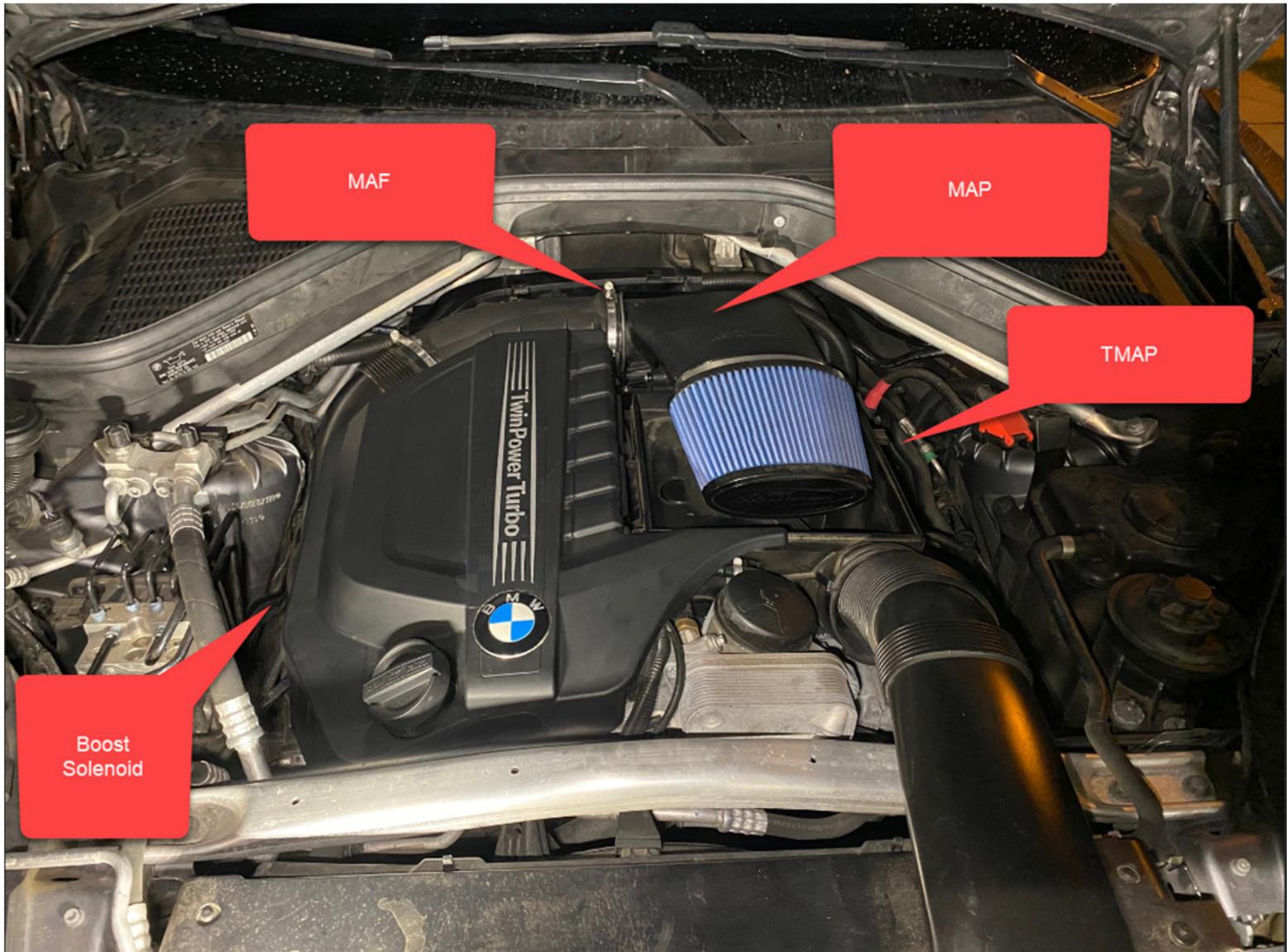
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**Note: Type B has a protruding clip while Type A has a smooth clip.
Please double check BEFORE ordering and if you can not positively identify your sensor email us a photo so we can identify it for you.**

1) Remove the plastic engine cover. The cover simply lifts off. Also remove the passenger side cowl cover which are secured by 3 10mm plastic release bolts. Turning the bolts 90 degrees each will release the tab and allow you to pull the cover off.

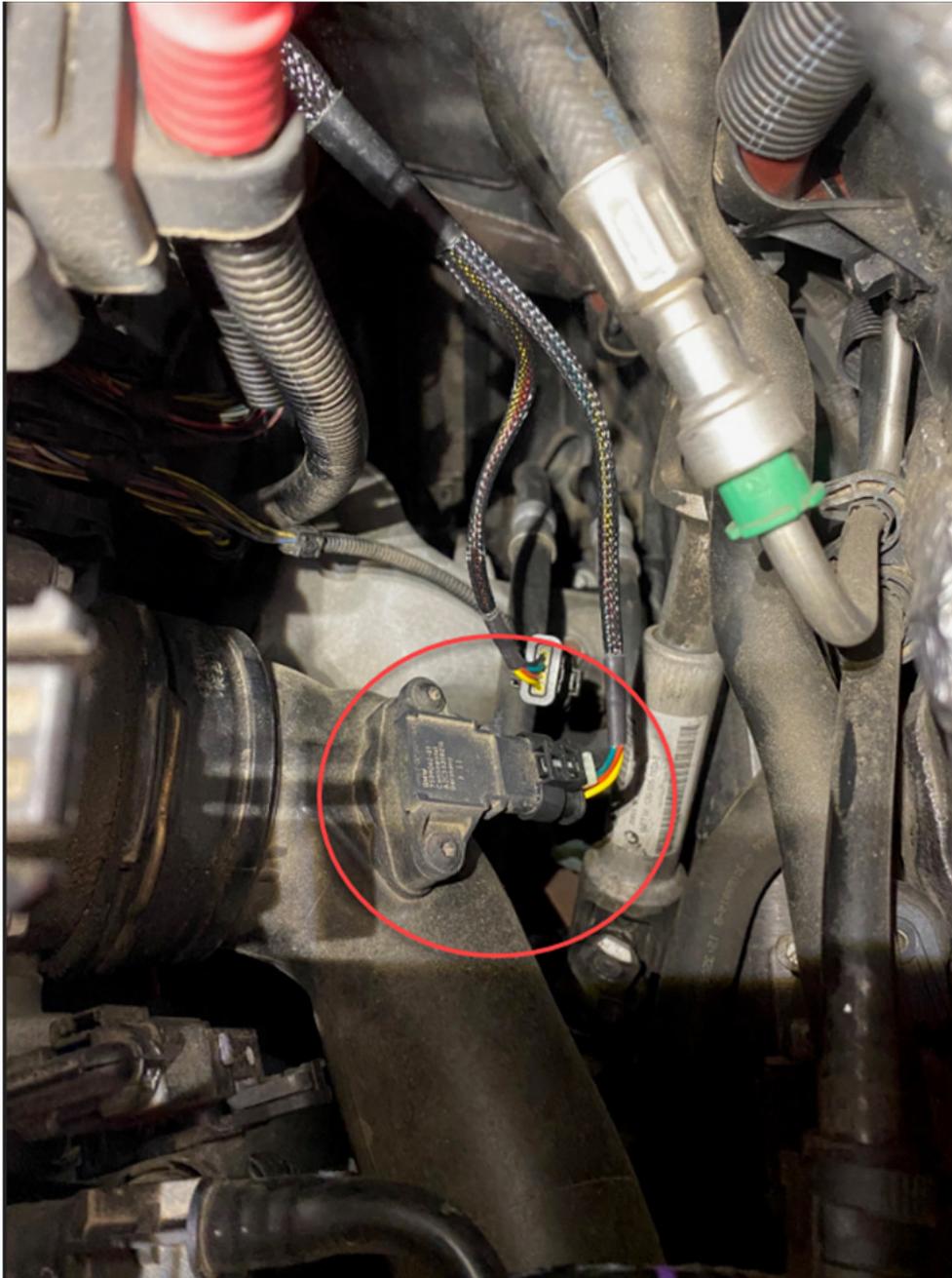
2) The harness is divided in to wire loops each with its own wire color which will be routed to a specific sensor on the vehicle. In addition, there is a pair of green and brown CAN wires that will connect to the CAN bus. Pneumatic wastegate (PWG) models also include blue solenoid patch, power wire, and ground wire. EWG models do not have these three connections.

3) General reference photo below, see detailed info for each connection. As an overview you will be installing plug 1 (TMAP, rainbow patch) & plug 2 (MAP, brown patch) for Stage 1 systems. For JB4 systems you will also install plug 4 (boost solenoid, blue patch). Plug 3 (MAF sensor, purple) is no longer used for any application. If you have an older harness with a purple patch on it, you can cut it off the harness or tuck it out of the way unused.



4) TMAP sensor, rainbow patch:

The TMAP sensor is located on the driver side of the engine bay, on the charge pipe leading in to the throttle body. Disconnect the TMAP sensor plug and plug it in to the JB4 female rainbow connection. Plug the male rainbow connection in to the TMAP sensor completing the loop. If you have difficulty removing this sensor plug the JB4 harness male and female in to each other and practice on how to remove them. Using a small screwdriver from the back side of the clip sometimes makes removal much easier.



5) MAP sensor, brown patch:

The MAP sensor is located on the top of the engine towards the back under the engine foam. It is visually identical to the TMAP sensor. Disconnect the MAP sensor plug and plug it in to the JB4 female brown connection. Plug the male brown connection in to the MAP sensor completing the loop.

X5/E70 models will need to remove the airbox top to access this sensor. The MAF connector at the top of the engine looks the same as the MAP but is the **WRONG SENSOR**. If you have not removed the airbox top to access the sensor it's installed wrong and will throw a CEL upon startup.



6) Fuel Pressure Connector (MAF), black patch. Optional to install.

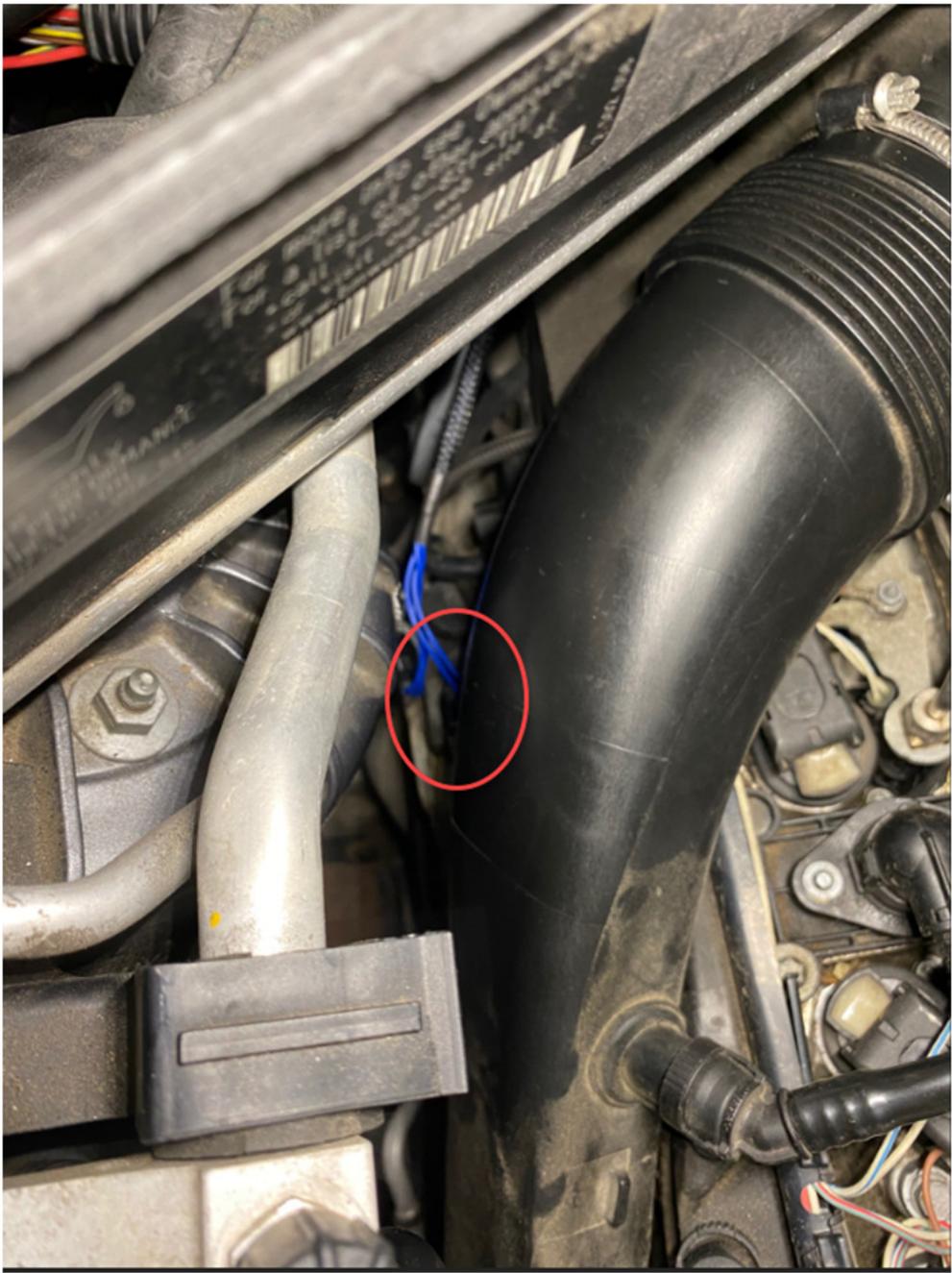
The Fuel Pressure Connector gives the JB4 a higher range of fuel trim adjustment which is useful for higher power levels and/or E85 fuel mixtures. Installation is optional and generally not used for customers running map1 or map2 on pump fuels. To access this connector, you need to pull back the foam covering it.



7) Boost solenoid, blue patch: Pneumatic Wastegate Vehicles Only.

Like the first two connections you unplug the OEM connector and connect it to the JB4 blue harness male, and then plug the JB4 blue female on to the solenoid. If your vehicle does not have a solenoid here, you are an "electronic wastegate" (EWG) vehicle and if you happened to have a PWG harness just tuck this connector out of the way.





8) PWG Models only: Black ground wire; CAN bus wires

- To access the “ECU” area, perform the following steps to remove the Cabin Air Filter:
 - Pop and lift the hood by pulling the release lever below the driver's seat.
 - The plastic filter cover is located on the upper left corner of the engine bay.



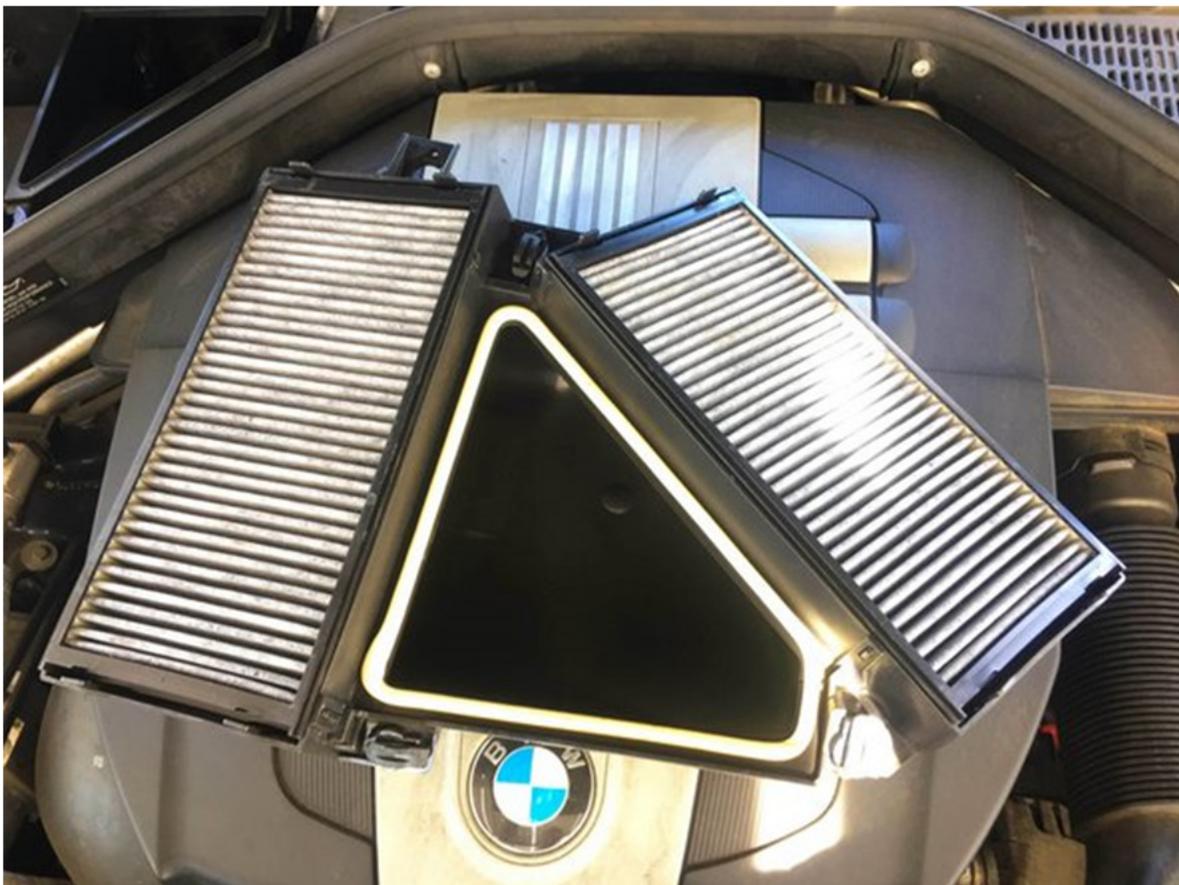
- There are four plastic screws on the air filter cover.
- Twist each of the plastic screws with the half inch screw driver a quarter turn counter-clockwise



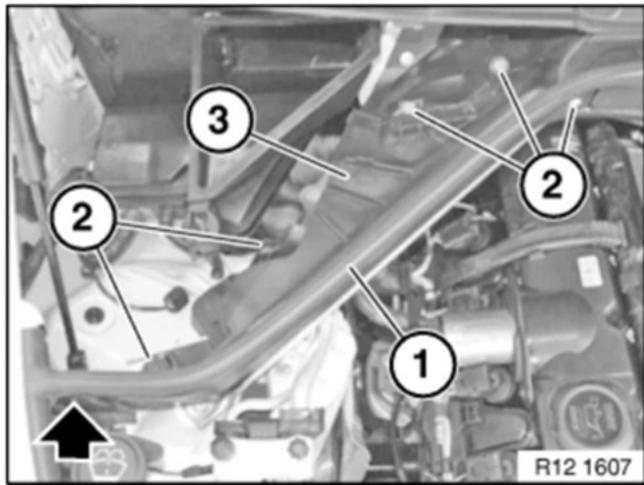
- Once plastic cover has been removed, cabin air filter cover will be exposed.
- There are three 1/2" plastic bolts.
- Unscrew each plastic bolt by turning a quarter turn counter clockwise.



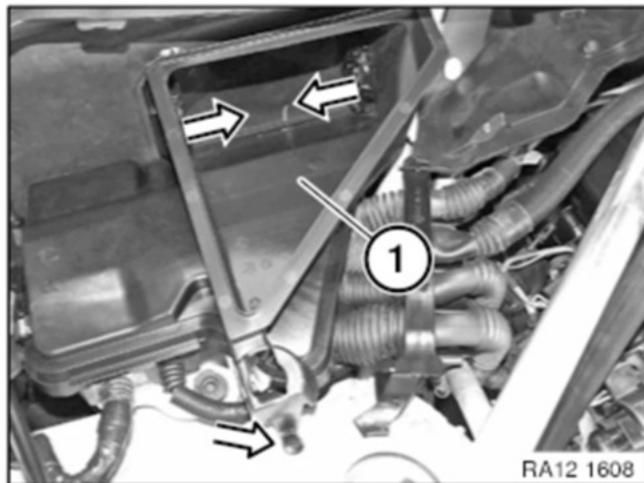
- Remove the electronic plastic connector before removing air filter cover.
- Remove the air filter cover from the vehicle.



- After the filter box is removed, the ECU area (where the CAN bus wires are located), is accessed as follows:

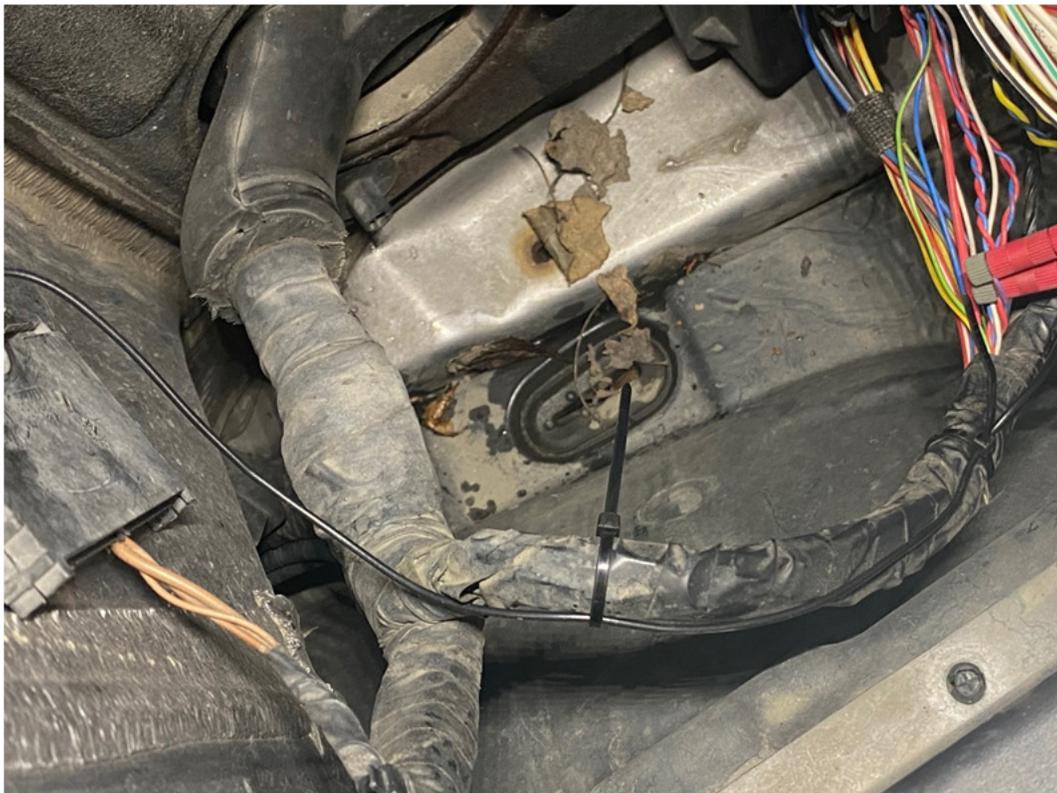


Lever out expanding rivet.
Remove gasket (1).
Unfasten screws (2).
Feed out partition wall (3) and remove.



Lever out expanding rivet.
Release locks in direction of arrow.
Feed out fresh-air duct (1) and remove.

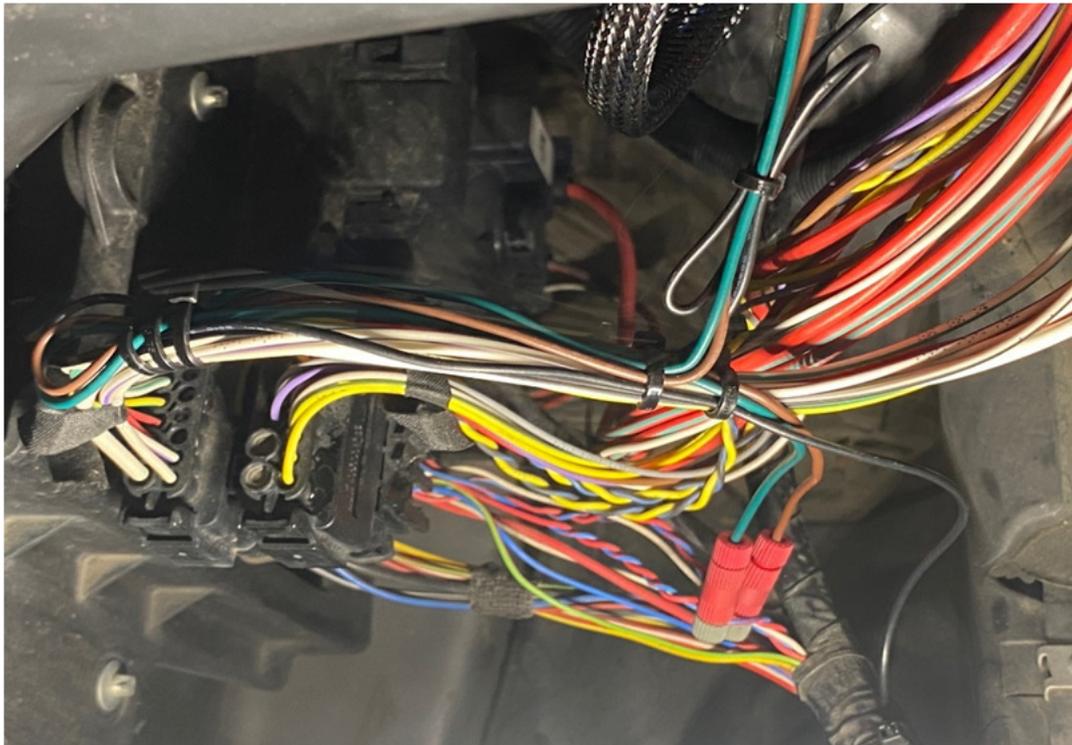
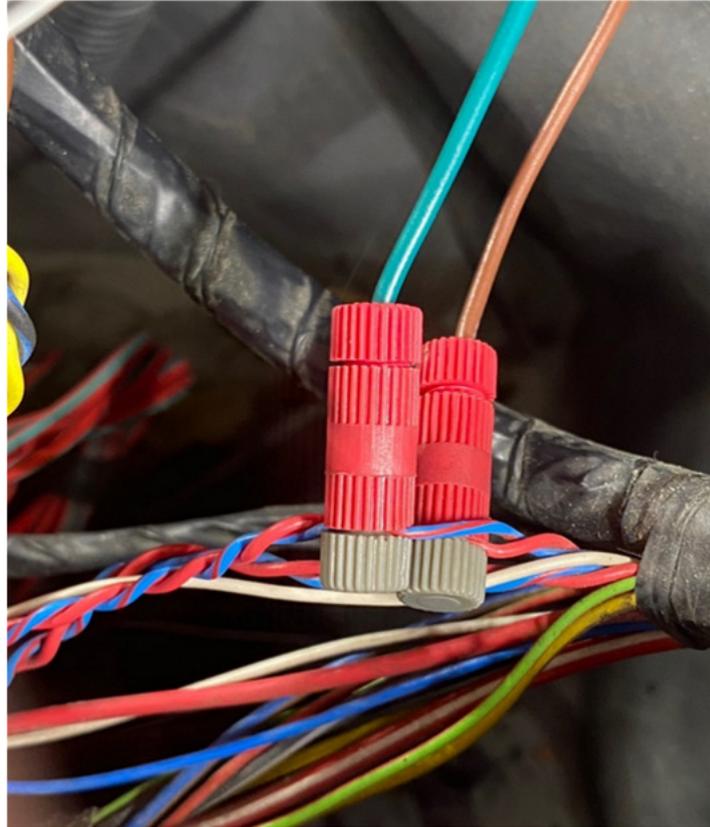
9) In the ECU area, connect the black ground wire to the passenger side GND located under the cabin air filter box or any other suitable chassis ground.



In addition, there is a pair of green and brown CAN wires that will connect to the CANbus. Pneumatic wastegate (PWG) models only

Brown → Red

Green → Red Stripe / Blue



10) Note there is no longer a dedicated red power wire as that is integrated in to the JB4 V2 harness now. For older systems equipped with a red wire attach it to the battery jumper using a Torx T50 bit.

11) Place the JB4 control box under the plastic air cabin filter box as shown below.



When reinstalling the cowl cover be sure it's fully seated and that you've lifted the rubber seal around it.

12) Reconnect negative battery terminal and reinstall the engine cover.

Installation is complete! Refer to N54tech for any additional install notes and info including how to change maps and enable in dash features like CAN flap and in dash boot gauge control Also note the JB4 has cold oil temperature protection built in and it will remain off until oil temps are greater than 160 degrees and the oil is thin enough to properly lubricate the turbo at higher boost levels.

Supplemental Information:

Installing BMS DATA Cable or JB4 MOBILE Bluetooth Adapter:

To enable data logging, firmware updates, and other more advanced features you'll want to add one of these two options. Disconnect the negative battery cable in the trunk, open the JB4 enclosure by removing the screws, remove the plastic shell covering on your BMS DATA Cable or JB4 Mobile kit, and using short screws either already in the JB4 board or included with the cable option attach the cable to the small connector on the JB4 board as shown below. Note short screws must be used to properly seat the connector.

Care should be taken when reassembling the JB4 enclosure as it is possible to damage the JB4 circuit board if you force it. The board will be positioned in the "bottom" printed case as shown below. Then place the top case over the top centering it with the rubber harness grommet. The case should sit relatively flush on its own once seated properly. Reinstall the screws to finish the job.