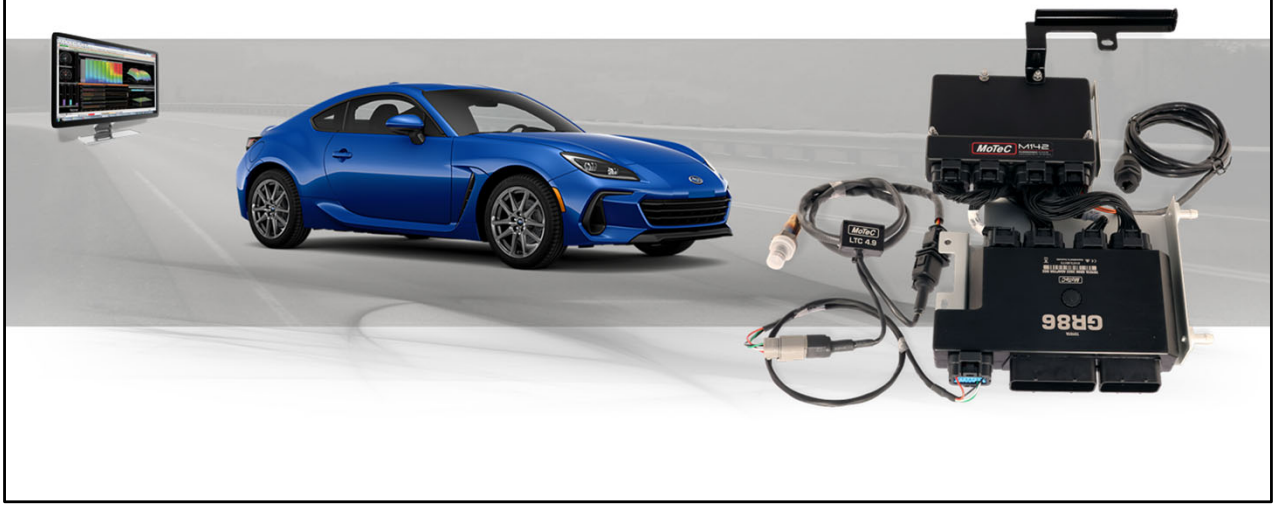
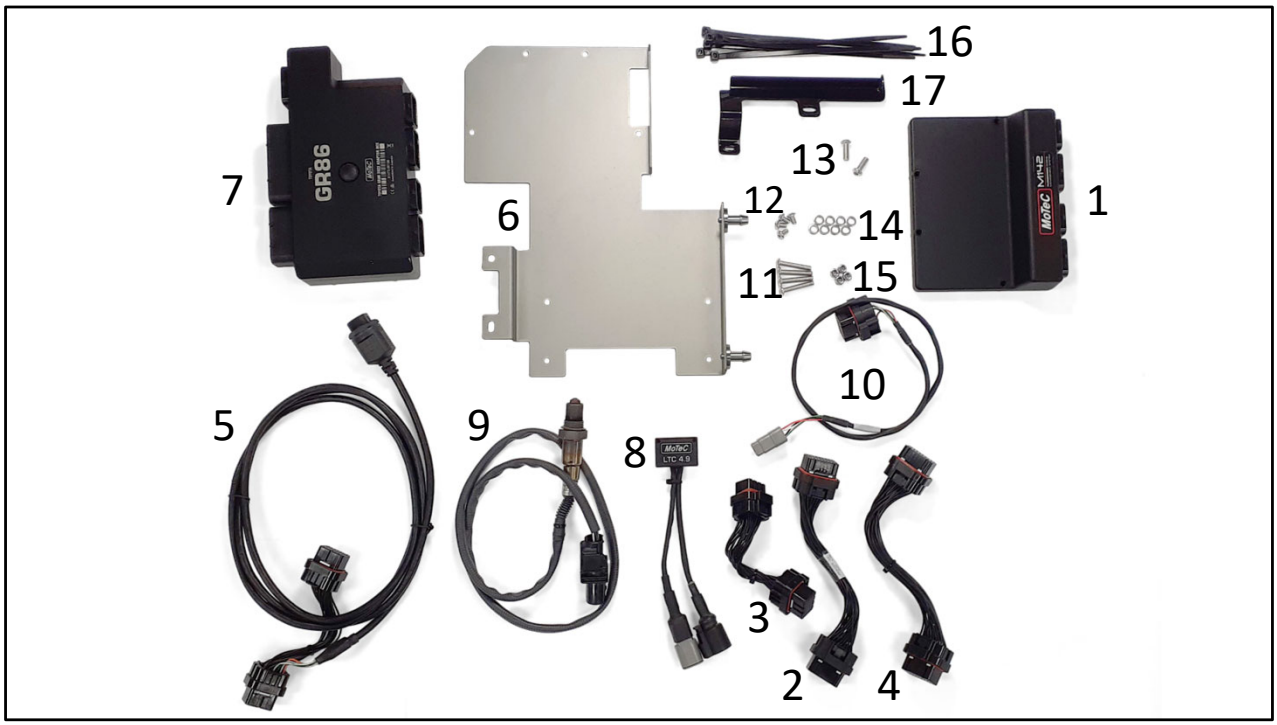
MoTeC
A Bosch Company

Toyota GR86/Subaru BRZ
INSTALLATION INSTRUCTIONS



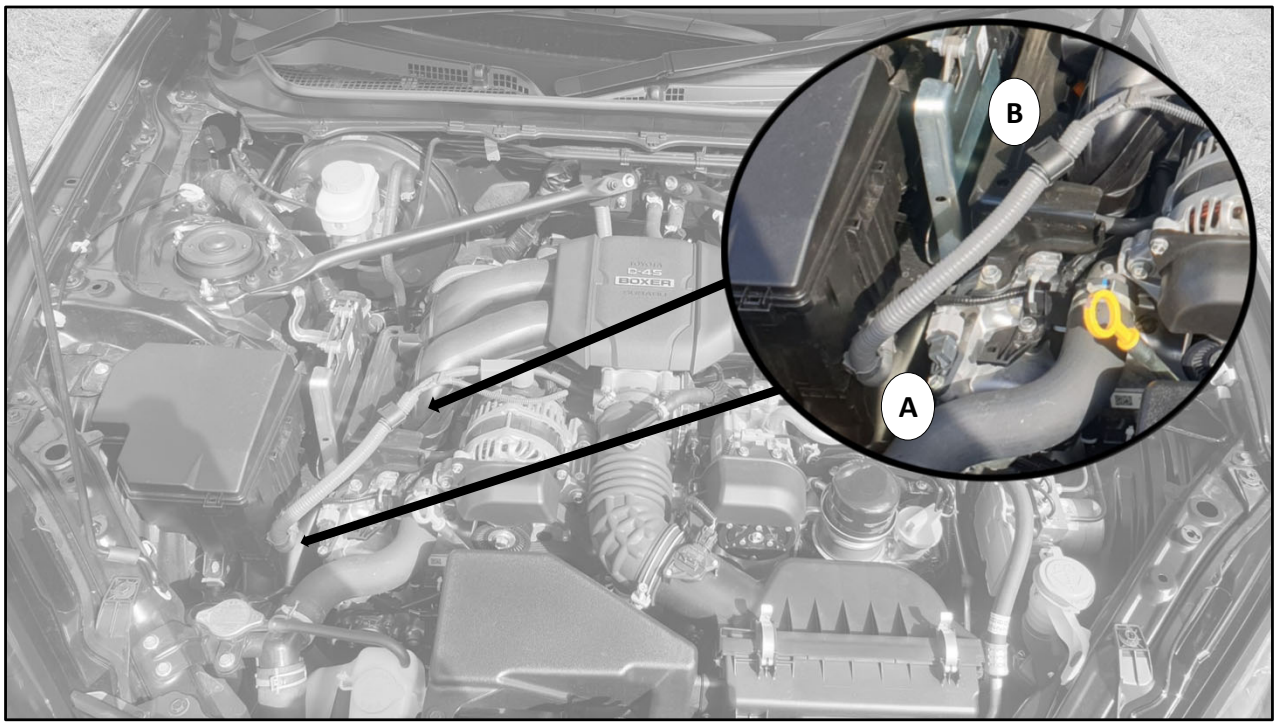


M142 Toyota GR86 2022 Kit Components

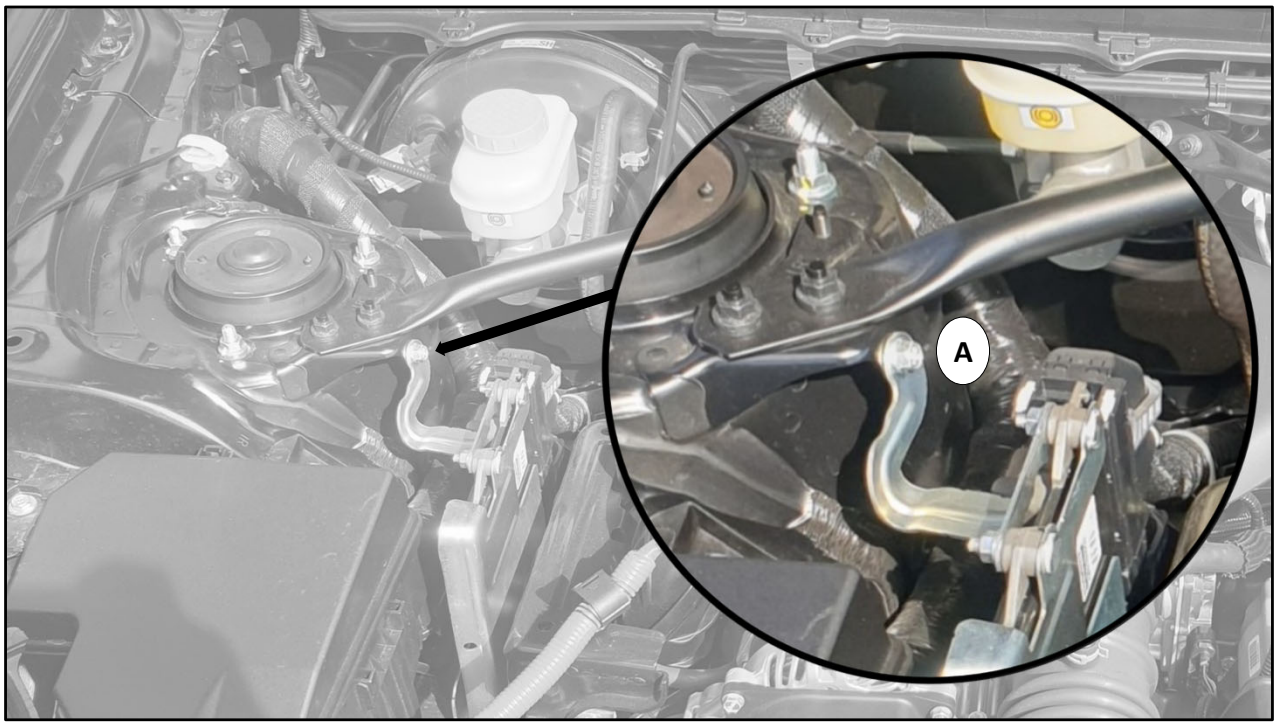
1. MoTeC M142 ECU
2. M1 Adaptor 150mm Stub Loom A (#61254)
3. M1 Adaptor 80mm Stub Loom B (#61474)
4. M1 Adaptor 150mm Stub Loom C (#61475)
5. M1 Adaptor 80mm Stub Loom D (Ethernet Cable) (#61476)
6. Toyota GR86 Mounting Bracket
7. MoTeC M142 Toyota GR 86 Adaptor Box
8. LTC – LSU Lambda to CAN
9. MoTeC LTC 4.9 (Bosch LSU version)
10. MoTeC Toyota GR86 2022 Breakout Loom
11. 4 x M5 x 30mm button head bolts
12. 4 x M5 x 10mm button head bolts
13. 2 x M5 x 15mm button head bolts
14. 4 x M5 washers
15. 4 x M5 nyloc nuts
16. Zipties
17. Support Bracket

Tools Required

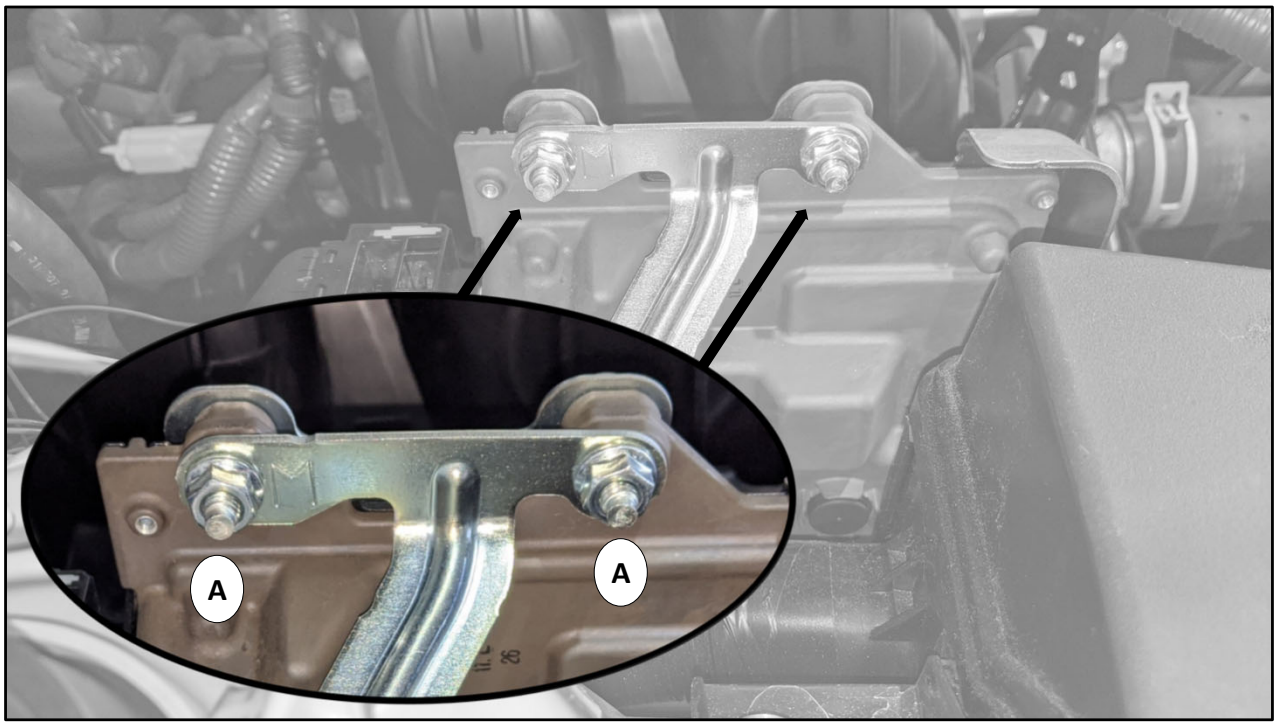
- 3mm Allen Key
- 4mm Allen Key
- Socket for Lambda Sensor
- 3/8 Universal Joint
- 12 inch 3/8 socket extension
- 3/8 Ratchet
- 10mm 3/8 Socket
- 10mm Spanner
- Needle Nose pliers
- Flat Head Screwdriver
- Side Cutters



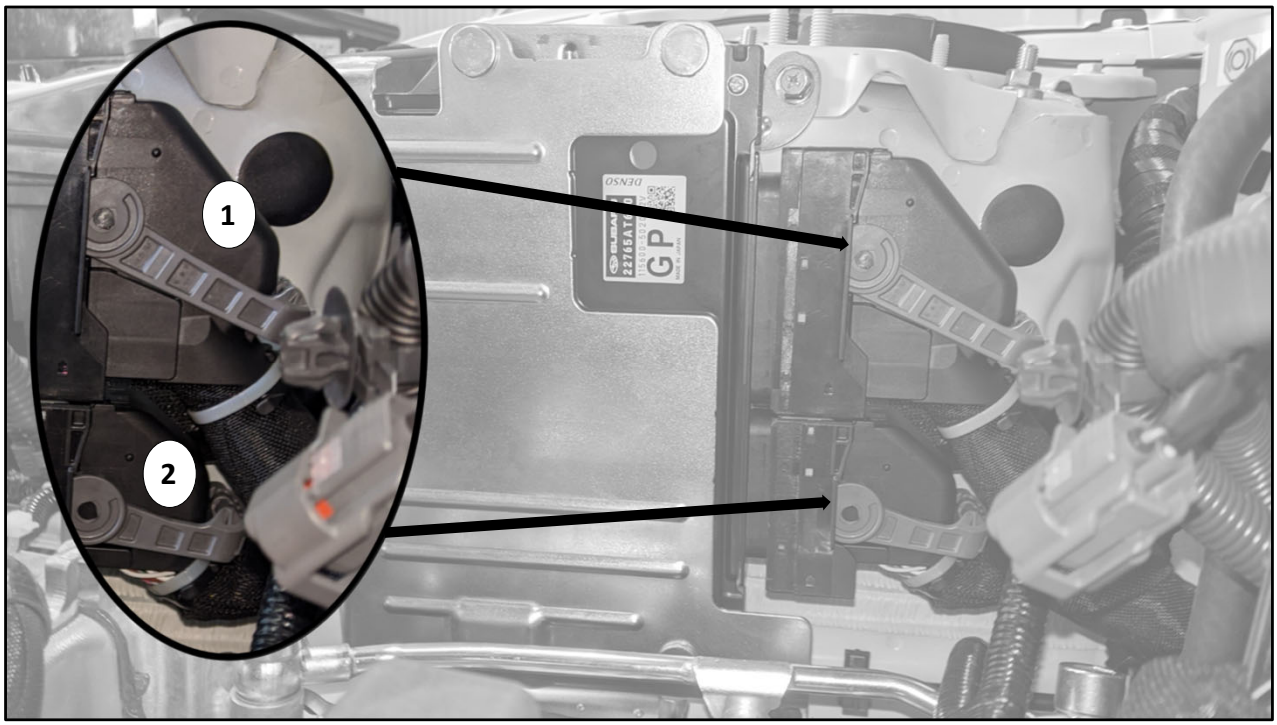
Step #1
Using a small flat head screwdriver or pliers, unclip the Alternator Cable from the fuse box (A) and supporting bracket (B) as shown above.



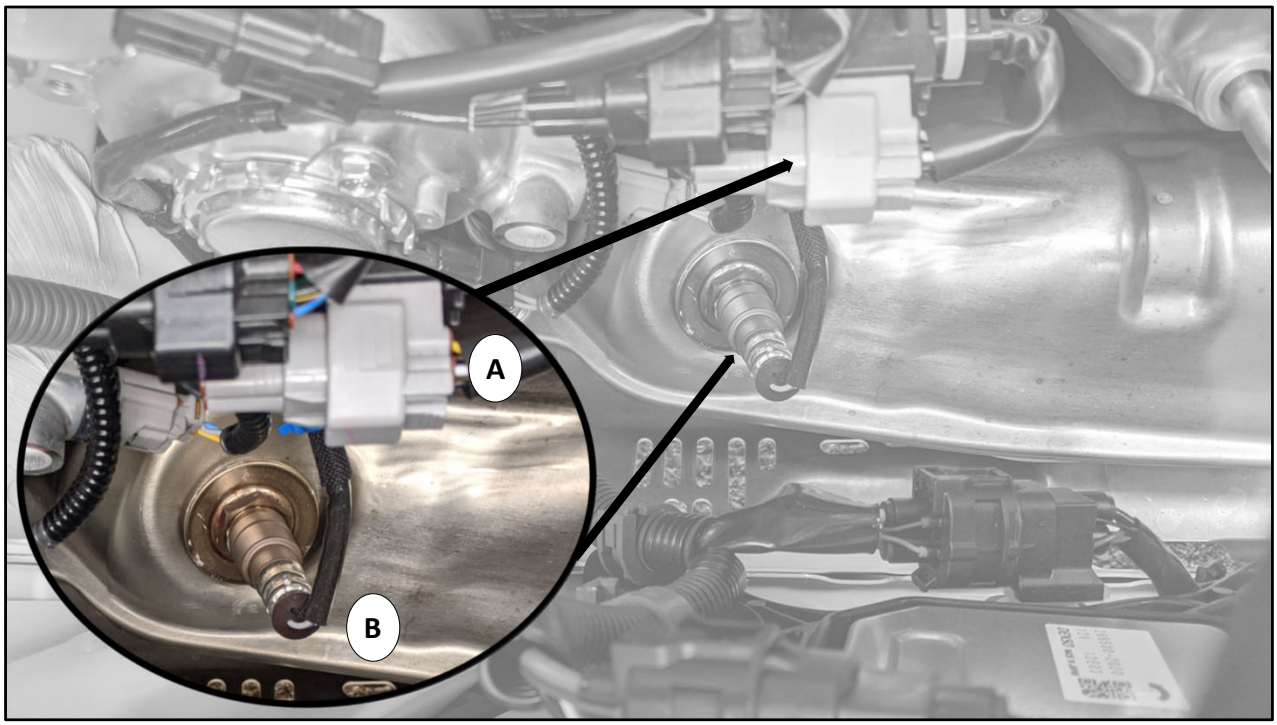
Step #2
Remove 10mm Bolt (A) with 10mm socket or spanner.
Retain this bolt as it will be reused.



Step #3
Remove the 2 10mm nuts (A) with 10mm socket or spanner.
Retain these nuts and bracket as they will be reused.



Step #4
Unplug the ECU Connectors in the order outlined above. They are removed by pressing down on the tab and moving the grey levers upwards.
The ECU can now be removed from the vehicle by lifting upwards. Underneath the ECU is held in a bracket by 2 rubber grommets so may be a little difficult to remove. Tilting the ECU while removing will help in removal.

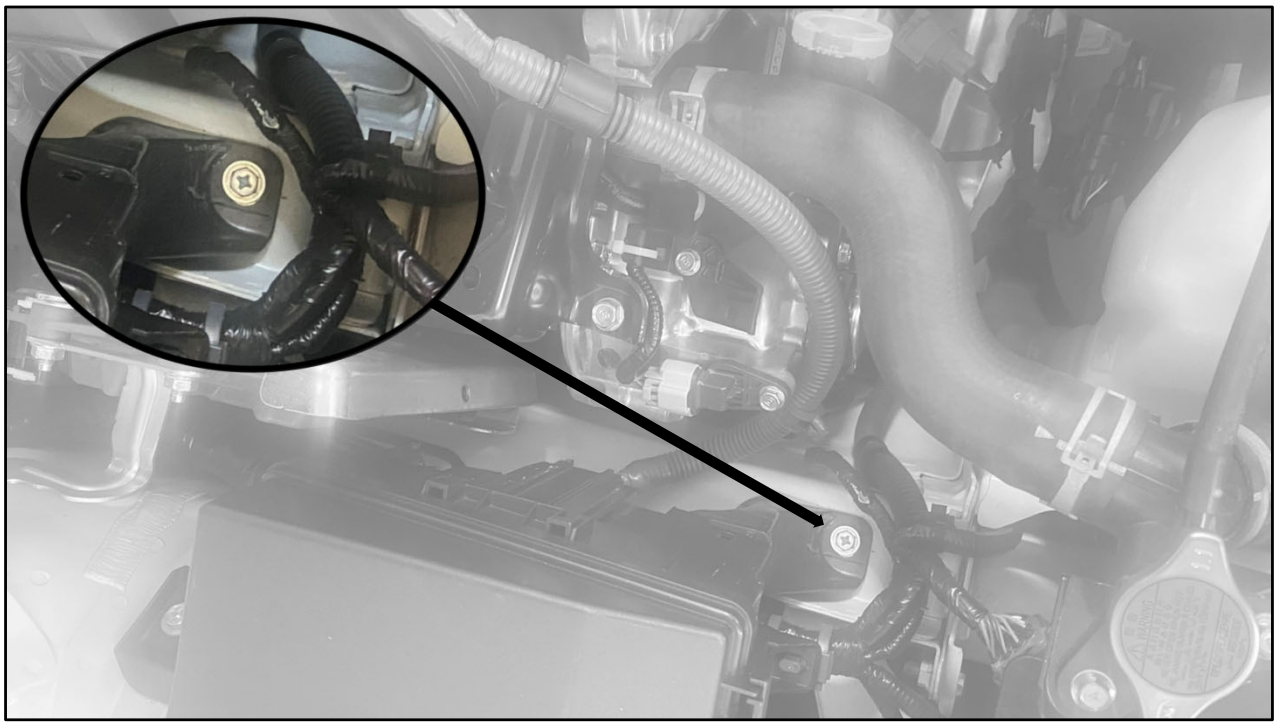


Step #5
Remove the OE wideband sensor.

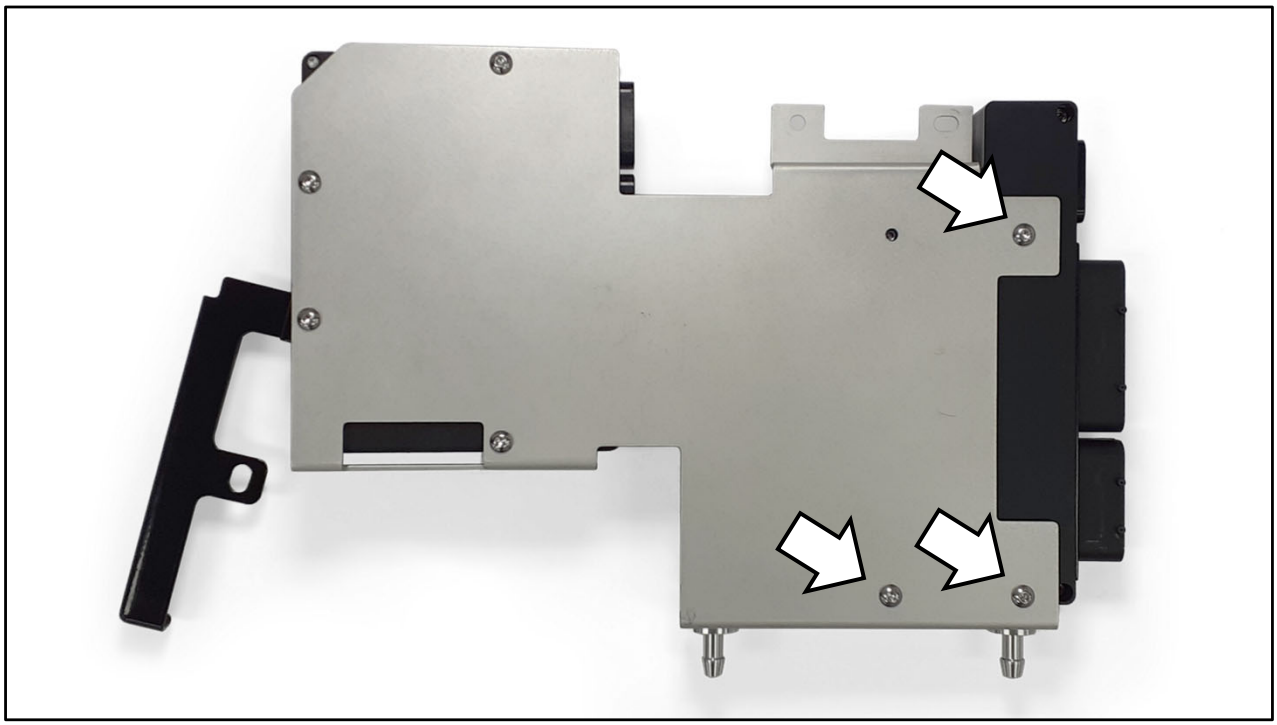
1. Disconnect the Connector (A).
2. Remove Lambda Sensor (B) with lambda sensor socket, universal joint, extension and ratchet.

Lambda Sensor is located on the front side of the engine on the driver side on the exhaust header as shown circled above.

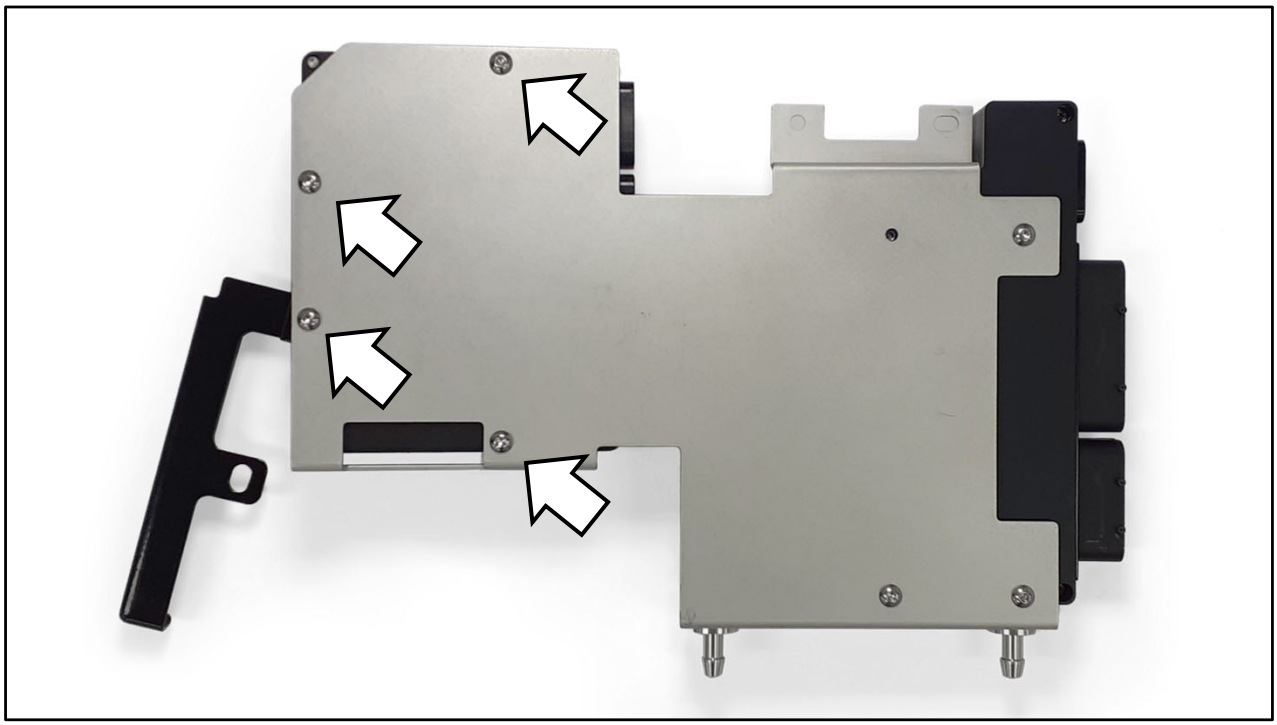
Step #6
Once the OE Lambda Sensor is removed, install and torque the supplied Bosch LSU 4.9 Wideband sensor in the exhaust header where the factory sensor was fitted.



Step #7
Remove the highlighted Bolt attaching the Fuse Box to the chassis.

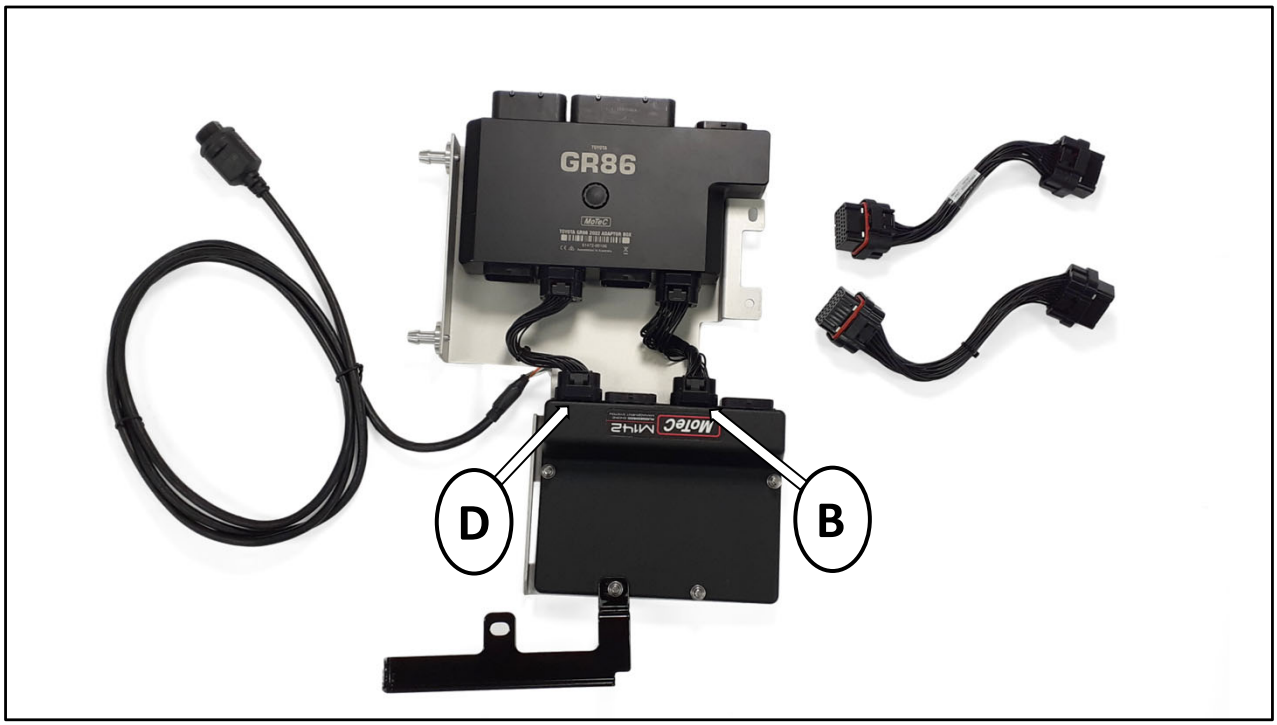


Step #8
Attach the Adaptor Box to the Mounting bracket using the 3 supplied M5 fasteners.



Step #9
Insert the 4 Bolts from the back of the adaptor mounting bracket.
Insert a washer onto each bolt before sliding M142 MoTeC ECU onto the bolt on the Mounting Bracket.
This is to maintain an air gap between the M142 ECU and the Adaptor Mounting Bracket.

Step #10
Insert the Support Bracket (A) onto the bolt.
Then place the supplied M5 Washers and M5 Locking Nuts onto all bolts ().
Tighten all Nuts except for the Support Bracket as this needs be tightened later as this can be used to ensure correct alignment clearance to the camshaft position sensor.

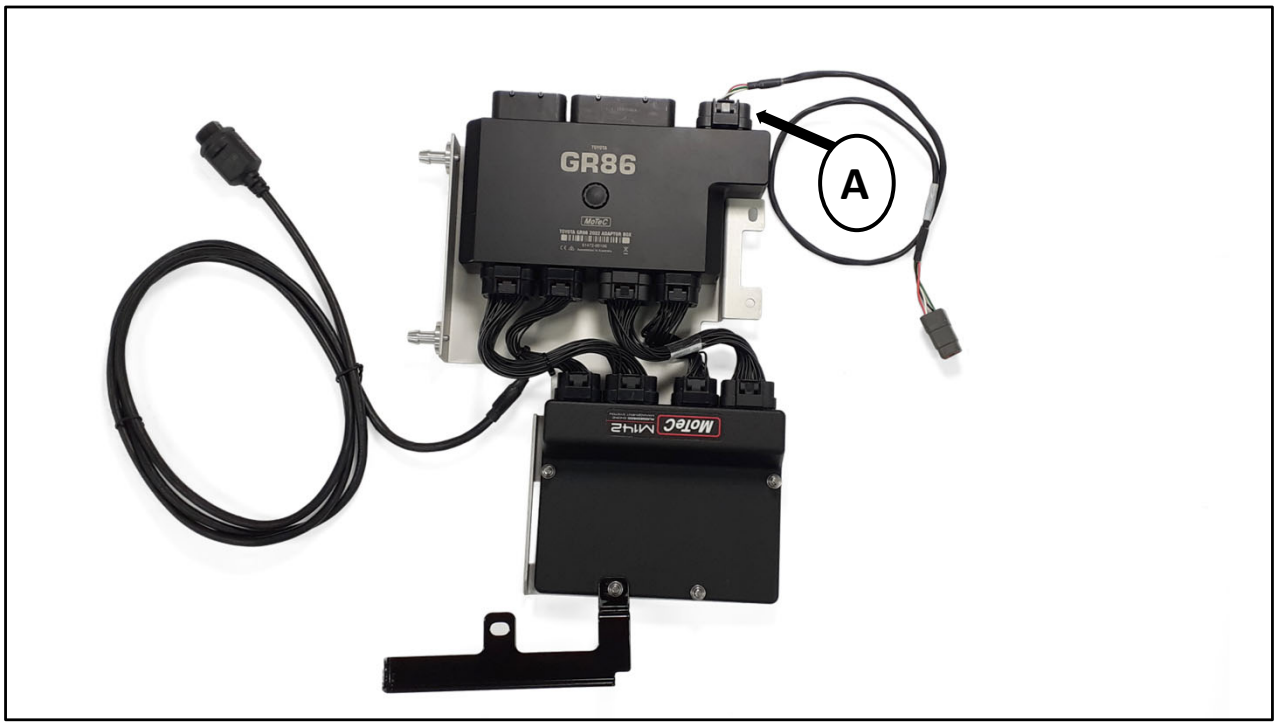


Step #11
Insert B (#61474) and D (#61476) stub looms first as labelled above.

Step #12
When connecting stub loom D ensure the end with the ethernet cable is attached to the M1 side as shown above. This will provide communication with the M142 ECU when installed.

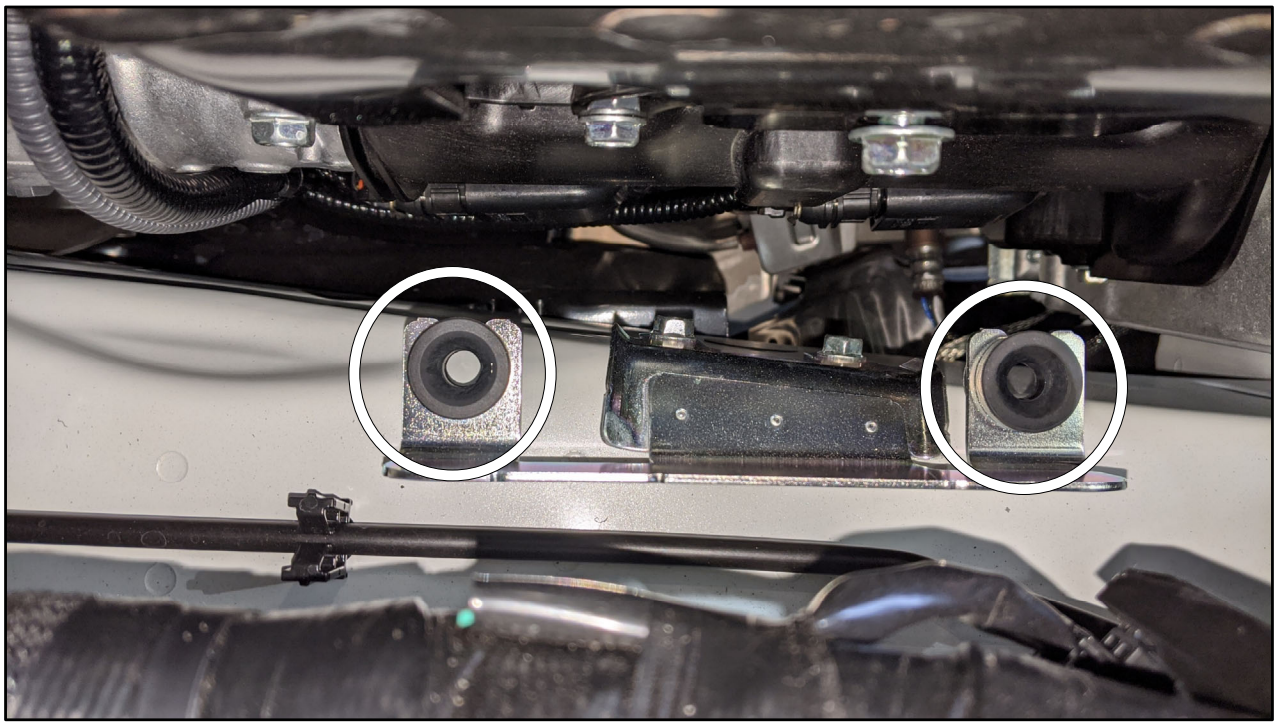
Step #13
Install Stub Loom C (#61475) in the location as shown above.

Step #14
Install Stub Loom A (#61254) in the remaining slot.



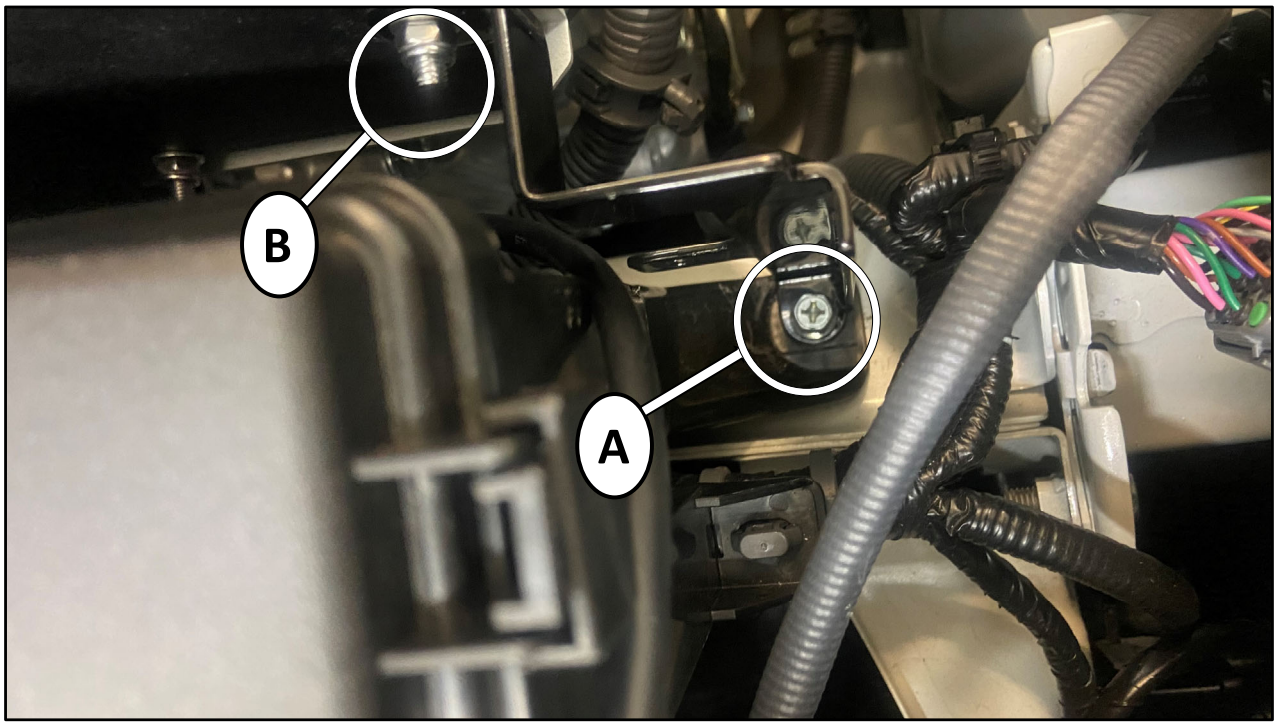
Step #15
Attach M1 Adaptor LTC Loom (A) to the Breakout Connector on the adaptor box as shown above.

Step #16
Connect the LTC -LSU into the 4 pin DTM connector (A).
Adaptor Kit Assembly is now complete.

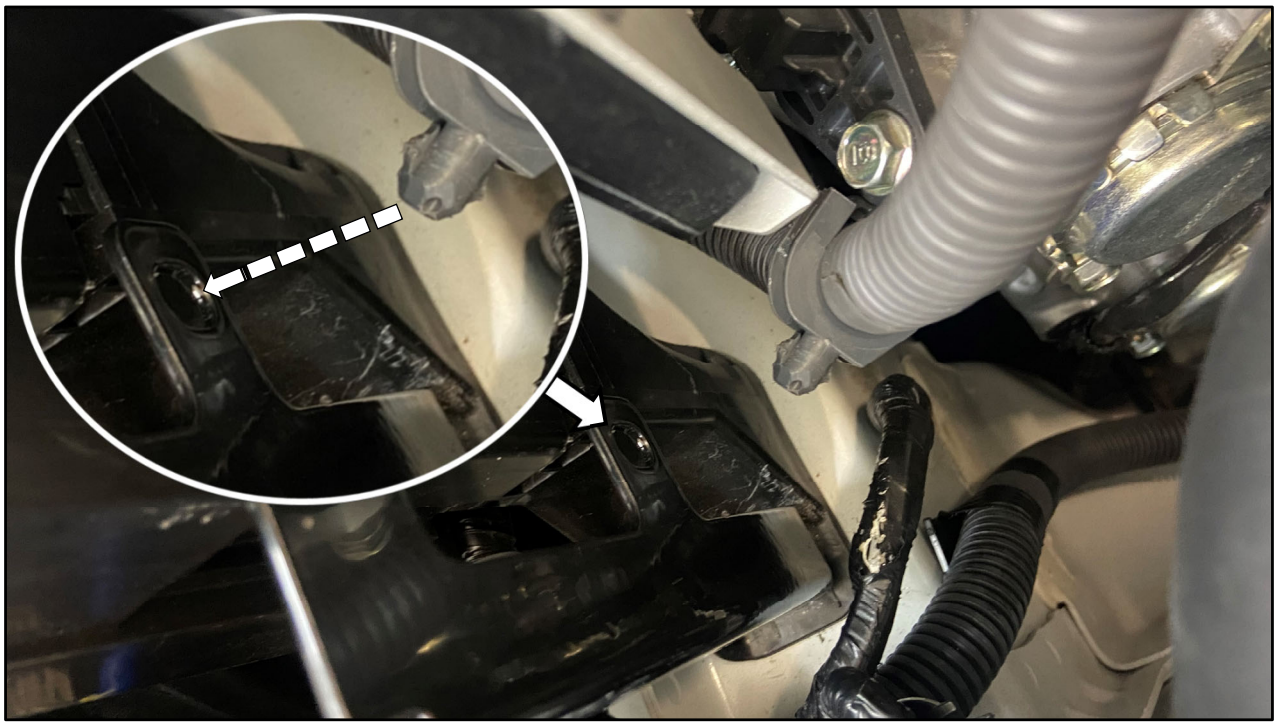


Step #17
Lower the Adaptor Kit Assembly into the highlighted OE ECU mounting grommets.
Before fully inserting the Adaptor Kit assembly, connect the OE ECU connectors in the reverse order shown in step #4, as it can be difficult to plug in once the Adaptor Kit Assembly is bolted down.

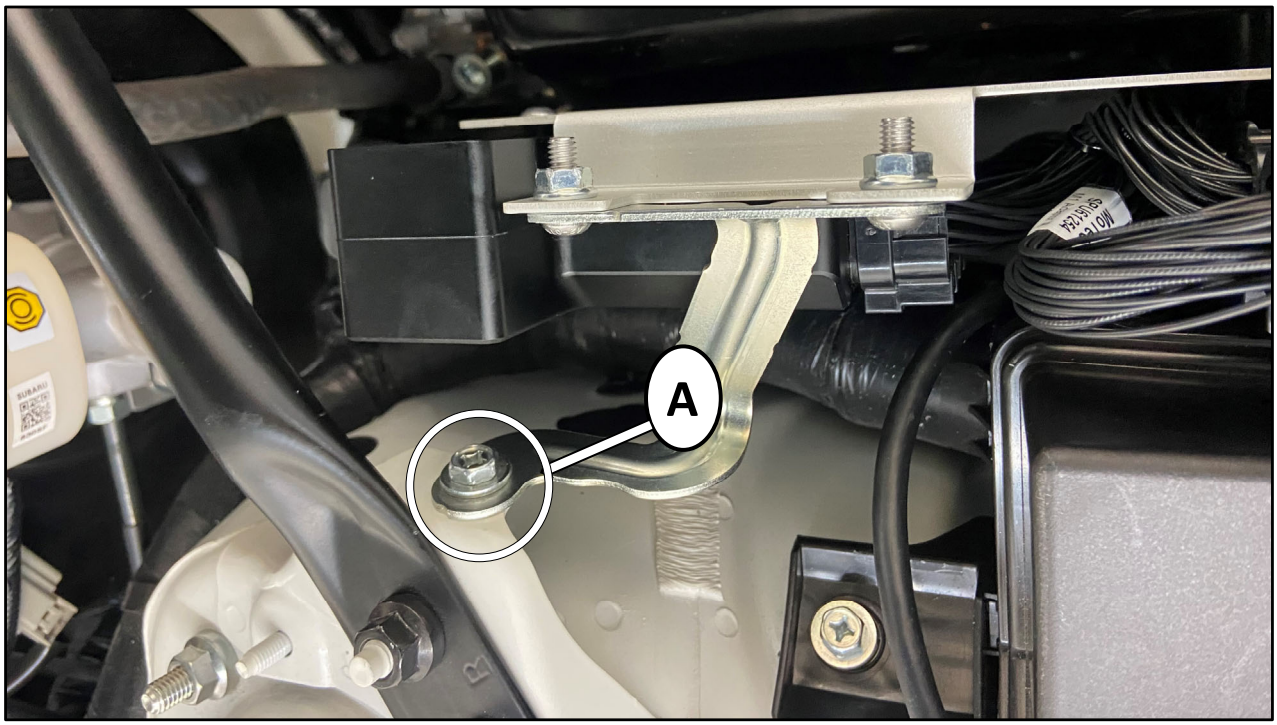
Step #18
Secure Adaptor Kit Assembly using OE Bracket that was removed in Step #3 as shown above using supplied M6 Buttonhead bolts with the nuts that were removed in Step #3.



Step #19
Using the supplied M6 Bolt secure the Support Bracket (A) and Fuse box to the chassis then tighten the M5 nut (B).

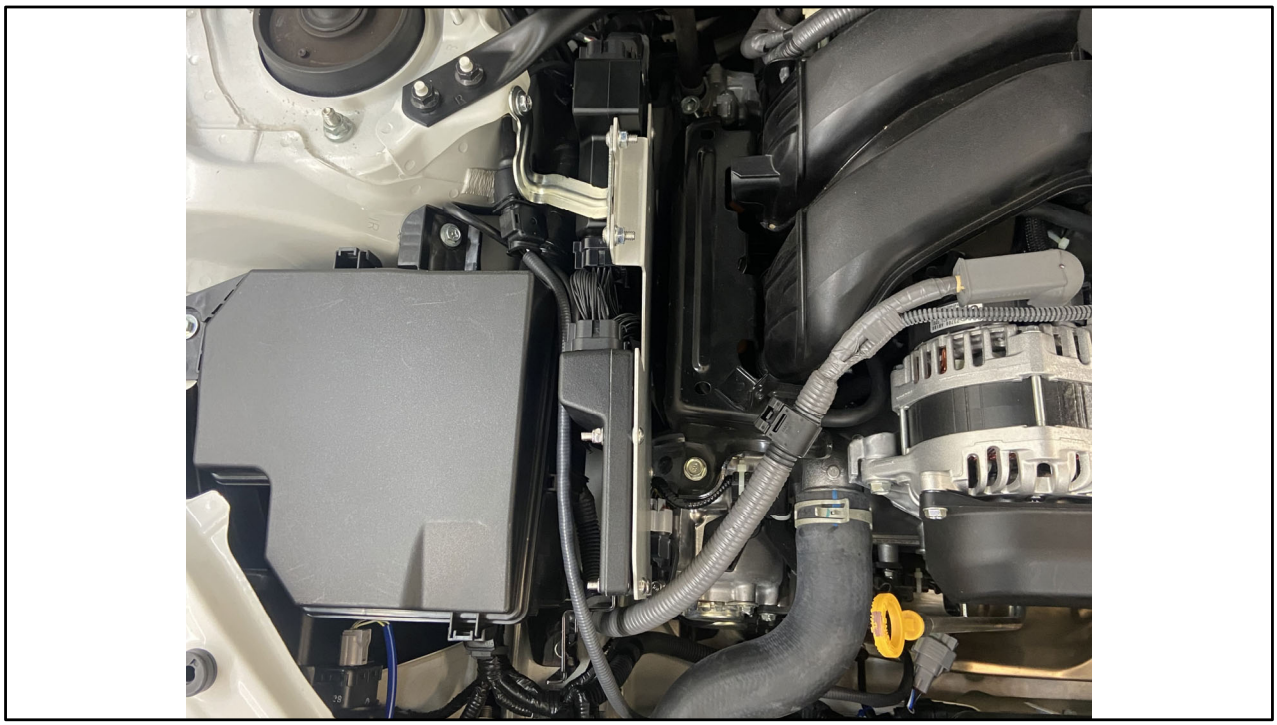


Step #20
The Alternator cable that was unclipped in Step #1 can now be attached to the Adaptor mounting bracket as shown above.



Step #21
Reattach the OE Bolt (A) that was removed in step #2
Ensure this bracket is pushed up as much as possible before tightening to allow for more clearance between the M142 ECU and the Camshaft Position Sensor.

Step #22
Connect the installed Lambda sensor connector (A) to the LTC as shown above.
Route wiring for Lambda sensor away from heat sources and fans.
Secure LTC.
Route communications (Ethernet) cable away from heat sources while remaining accessible.



Installation Complete.