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GR COROLLA 11414 M1 KIT
INSTALL INSTRUCTIONS

The following procedure details installation of this kit into a 2023 Toyota GR Corolla.

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Kit Components:

1. 13142M M142M ECU MARINE
2. 61487 TOYOTA G16E ADAPTOR BOX
3. 61250 M1 ADAPTOR 200MM 34W KEY 2 STUB LOOM
4. 61251 M1 ADAPTOR 120MM 26W KEY 3 STUB LOOM
5. 61252 M1 ADAPTOR 120MM 34W KEY 1 STUB LOOM
6. 61253 M1 ADAPTOR 200MM 26W KEY 1 STUB LOOM
7. 57006 LAMBDA SENSOR WIDEBAND BOSCH LSU 4.9
8. 61300K LTC - LSU LAMBDA TO CAN (500K)
9. 61430 M1 ADAPTOR LTC LOOM
10. 61496 GR COROLLA CAN ISO GATEWAY
11. 61497 GR COROLLA CAN ISO GATEWAY POWER
12. 61605 POWER EXTENSION LOOM (Required for L/H drive vehicles only)

Kit Components cont:

13. 61488 GR COROLLA MOUNTING KIT
    - 1 X 68050 CONNECTOR, DTM 2 PIN (M)
    - 1 X 68051 CONNECTOR, DTM 2 PIN (F)
    - 1 X 80542 SCREW M3X8 S/S BUTTON SOCKET
    - 2 X 80597 F/W SS M5x10x0.8
    - 1 X 81568 TAPE- VELCRO DUAL LOCK BLK
    - 2 X 81577 SCREW M5 X 25 S/S BUTTON SOCKET
    - 8 X 81963 CABLE TIE- 4.8 X 200mm NYLON 66 BLACK
    - 1 X 82095 CABLE TIE MOUNT

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Tools required:

- 8 mm and 10mm hex socket
- 3/8 Ratchet
- 3/8 Extension (long)
- 3/8 Universal joint
- Lambda sensor Socket
- Selection of plastic trim removal tools
- Small flat blade screwdriver
- Philips head screwdriver
- 2 and 3 mm hex keys
- Flush cutters
- Sharp blade / Scissors

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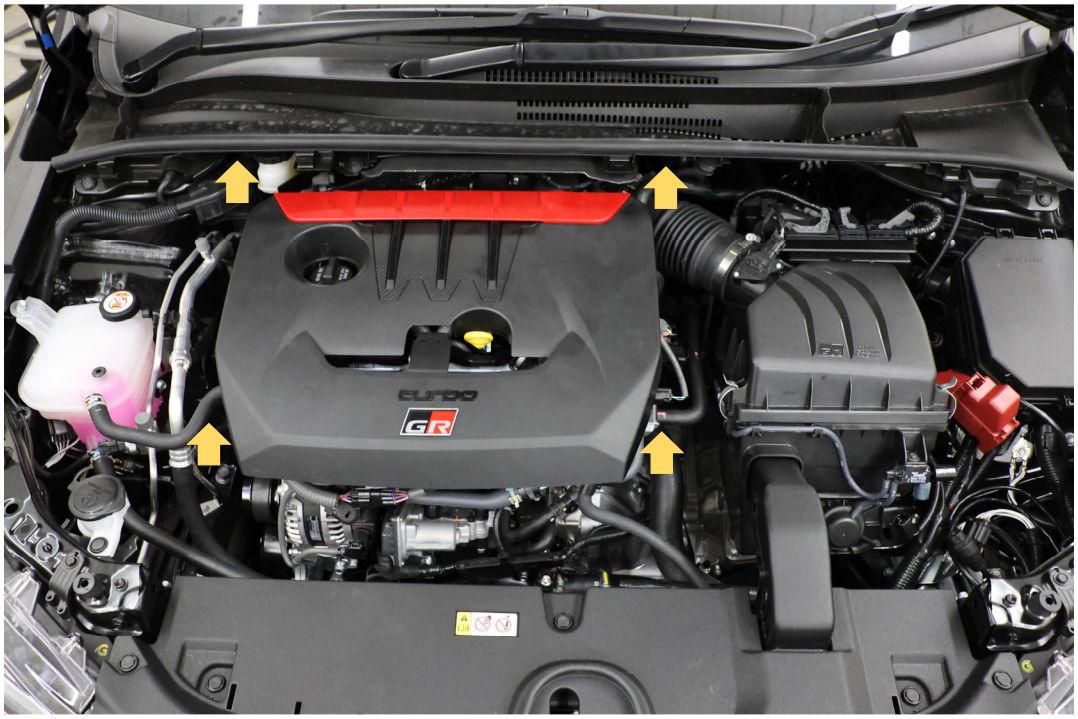

Remove OE ECU

1. With the key off and the vehicle parked in a suitable location, open the bonnet.
2. Remove engine cover.
3. Use the corners of the engine cover to pull up by hand, remove from the vehicle.

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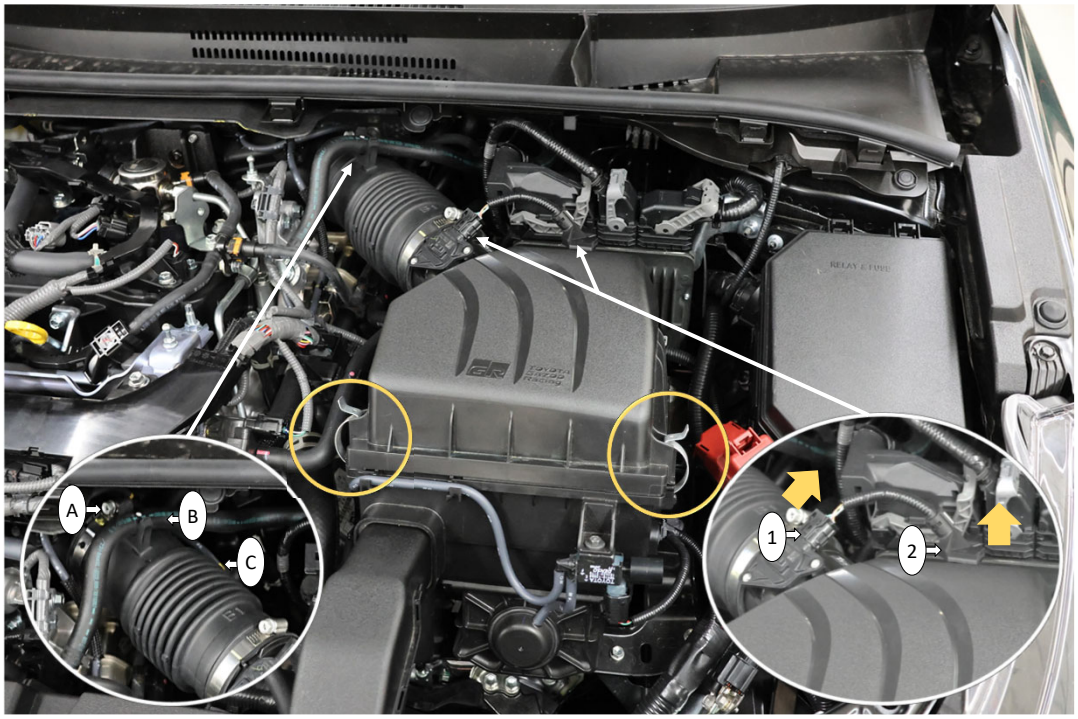

1. Disconnect the MAF sensor wiring connector **1**.
2. Unclip the wiring mount **2**.
3. Loosen the Induction tube clamp **A**.
4. Unclip and move aside hose **B** (white dot).
5. Unclip and move aside hose **C** (yellow band).
6. Unclip the two airbox clips (Yellow circles).
7. Carefully remove the airbox lid assembly from the vehicle.

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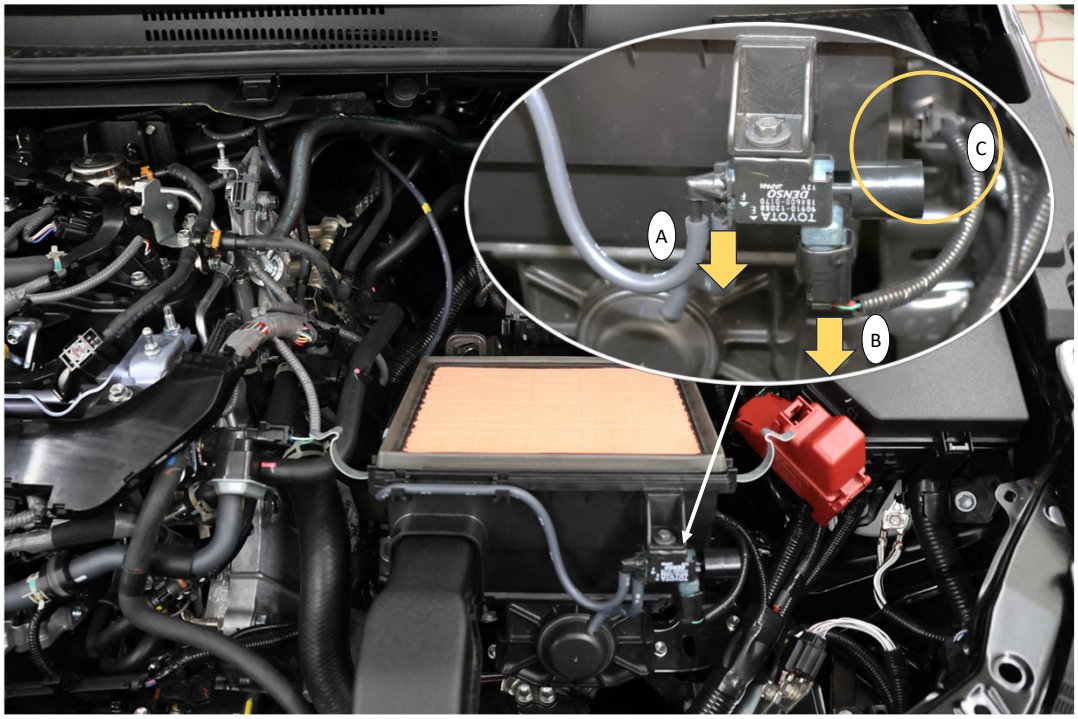
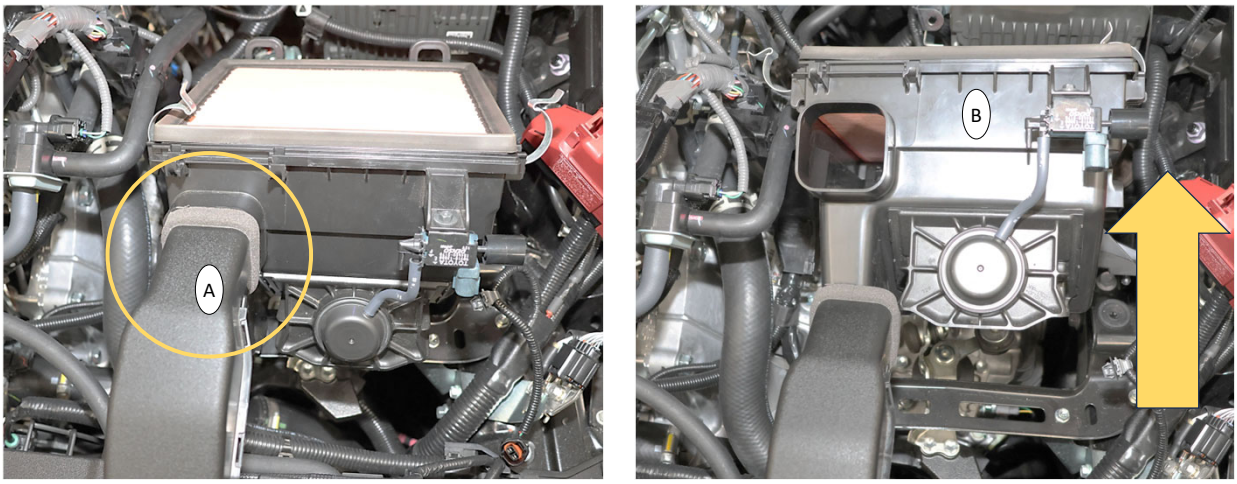


1. Remove the vacuum hose from the switch **A**.
2. Unclip the vacuum hose in 4 spots from the airbox lower.
3. Disconnect the vacuum switch wiring connection **B**.
4. Unclip the wiring mount **C**.



1. Carefully pull the airbox lower **B** upwards to release it from the 3 mounting grommets.

   NOTE:

   - Ensure the cold air intake pipe **A** is not strained during the airbox removal.
   - Tilt the airbox lower to allow the cold air intake pipe to release.

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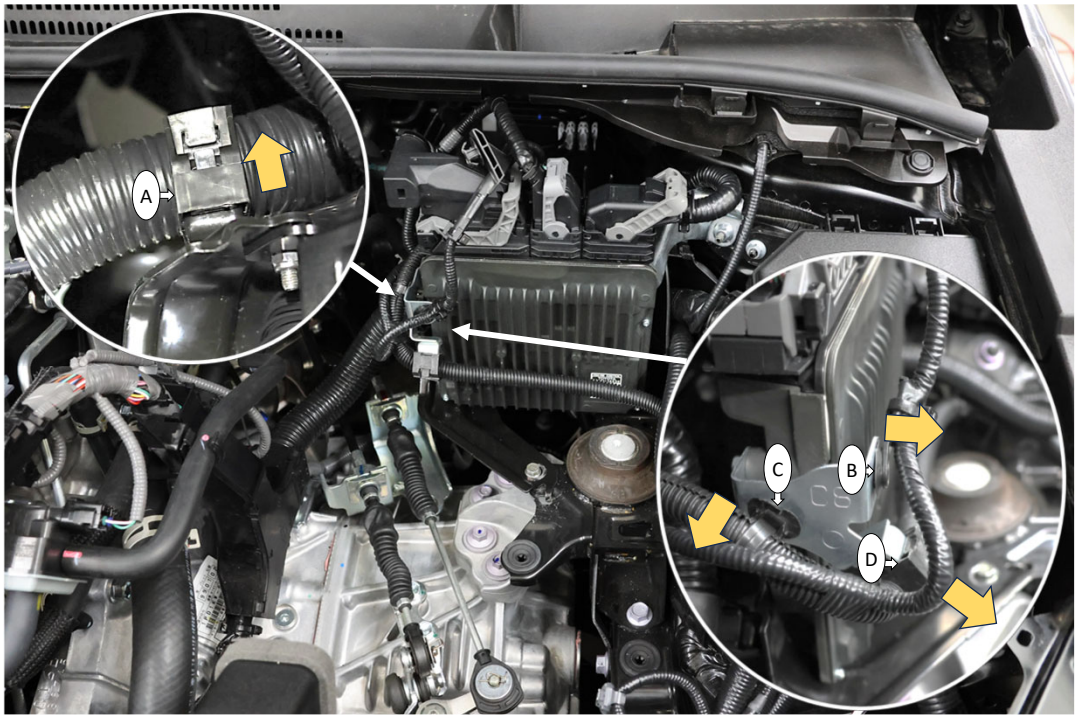

1. Unclip wiring mount **A** by lifting the tab and sliding off.

   NOTE: Remove this wiring mount from the ECU bracket it is not utilised for this kit.

2. Unclip wiring mount **B** by squeezing barbs from behind.
3. Unclip wiring mount **C** by squeezing barbs from behind.
4. Unclip wiring mount **D** by lifting the tab and sliding off.

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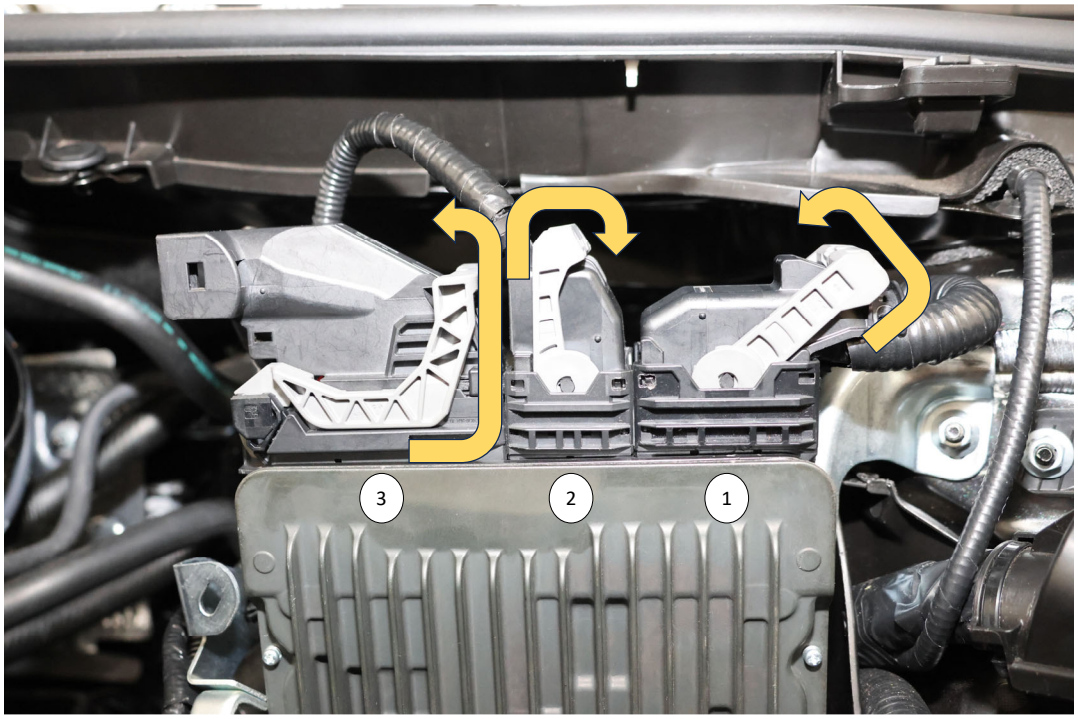

1. Remove the OE ECU plugs in the order shown.
2. The grey levers are held by a latch on the black section of the plugs. Hold the latch in while moving the lever in the direction shown.

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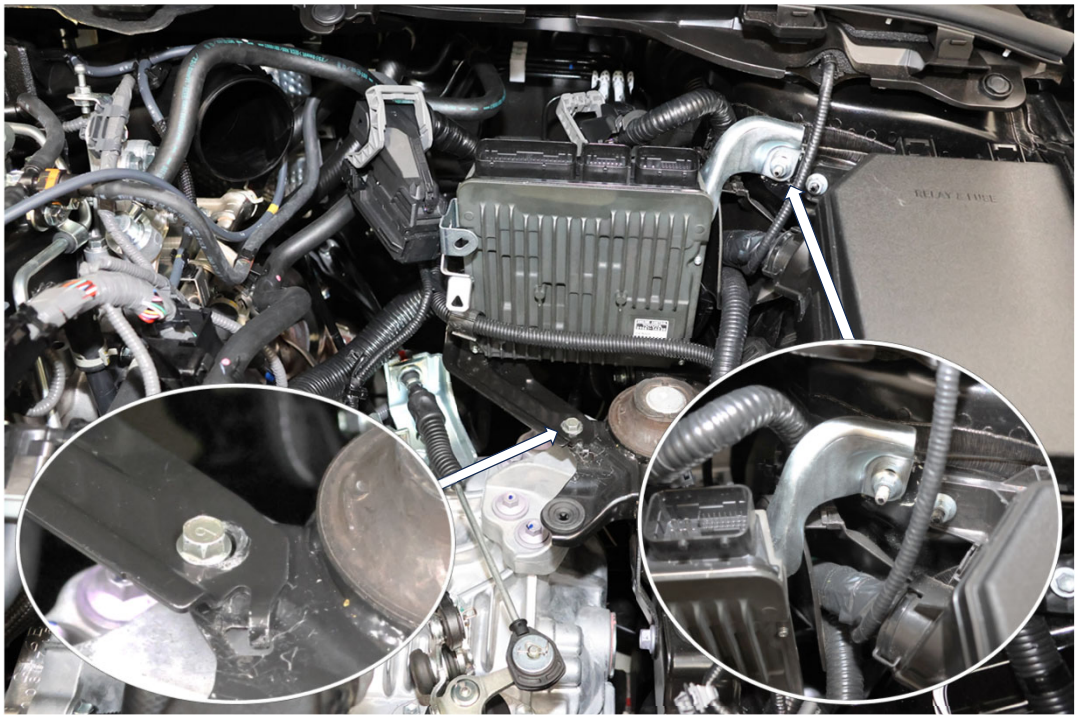
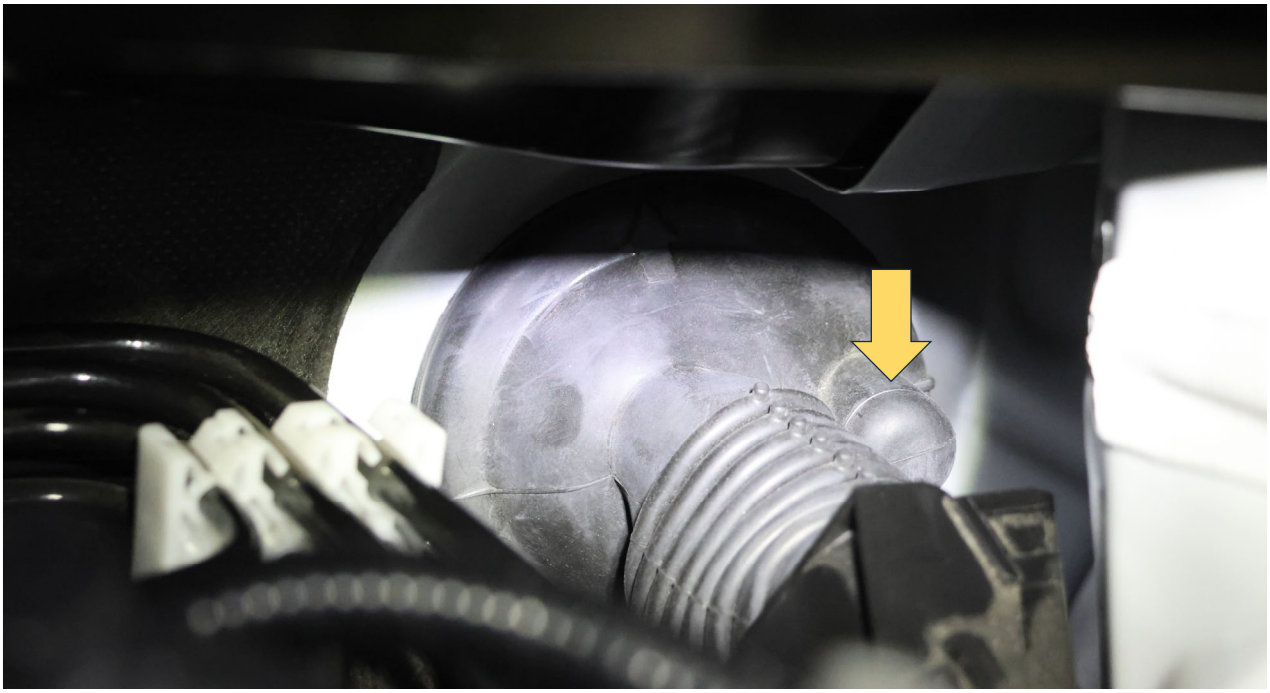


1. Remove the 10mm head nut from the upper mount.
2. Remove the 10mm head bolt from the lower mount.
3. Carefully manoeuvre the OE EUC assembly from the wiring harness, remove from the vehicle .



Install CAN ISO gateway and gateway power loom

1. Locate the fire wall grommet behind the ECU mounting location beside the L/H strut tower.
2. Use a sharp blade to cut the end of the nipple off (yellow arrow), using the moulding line as a guide. The CAN ISO gateway power loom will pass through the nipple.
3. To aid in getting the wiring through this hole, feed a pull aid through from the engine bay side (a piece of welding filler rod, or a piece of wire are easiest).

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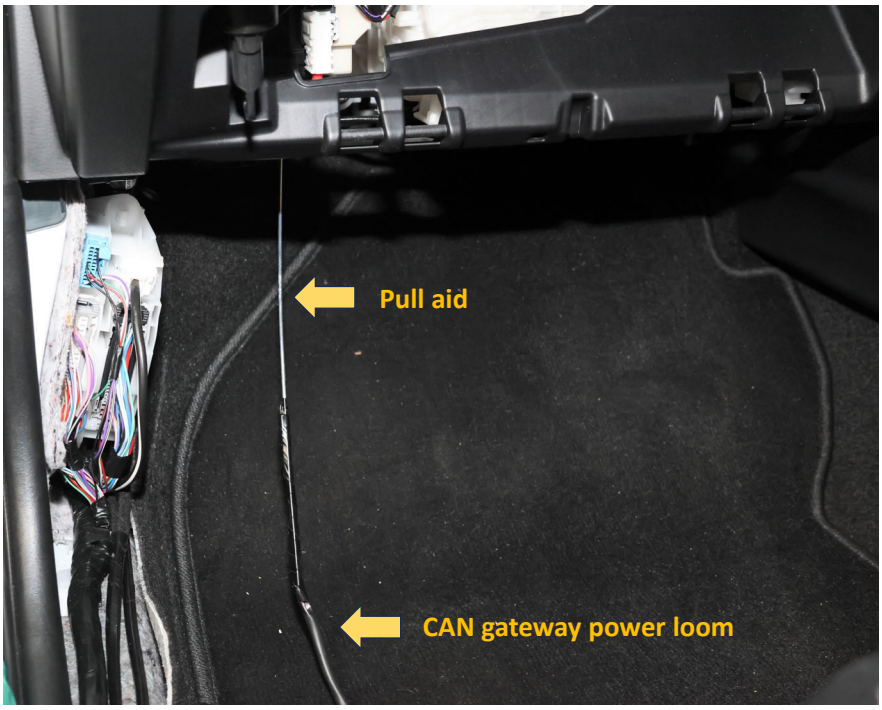

1. Remove the:

- L/H kick panel
- Glove box
- Glove box under panel

2. From inside the L/H front footwell area, secure the CAN gateway power loom to the pull aid then pull the wiring through the firewall grommet carefully, ensuring the loom does not get caught on or wrapped around anything.

   NOTE: This is easiest with one person guiding the loom, whilst another person pulls it through.

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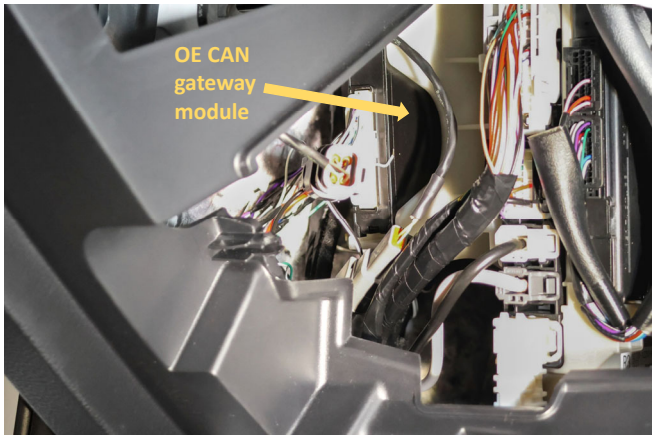

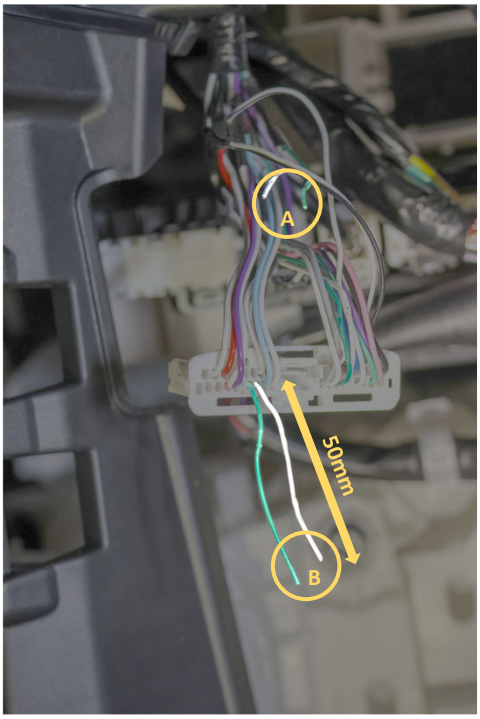

1. Locate the OE CAN gateway module, remove the connector.

   NOTE: Refer to the diagram on page 15 for the following steps.
2. Remove approximately 130mm of insulating tape from the CAN connector loom.
3. Cut the two CAN wires approximately 50mm from the connector.
4. Fit 2 pin male DTM connector 68050 to OE CAN gateway connector position **B**.
5. Fit 2 pin female DTM connector 68051 to the CAN ISO gateway OE loom position **A**.

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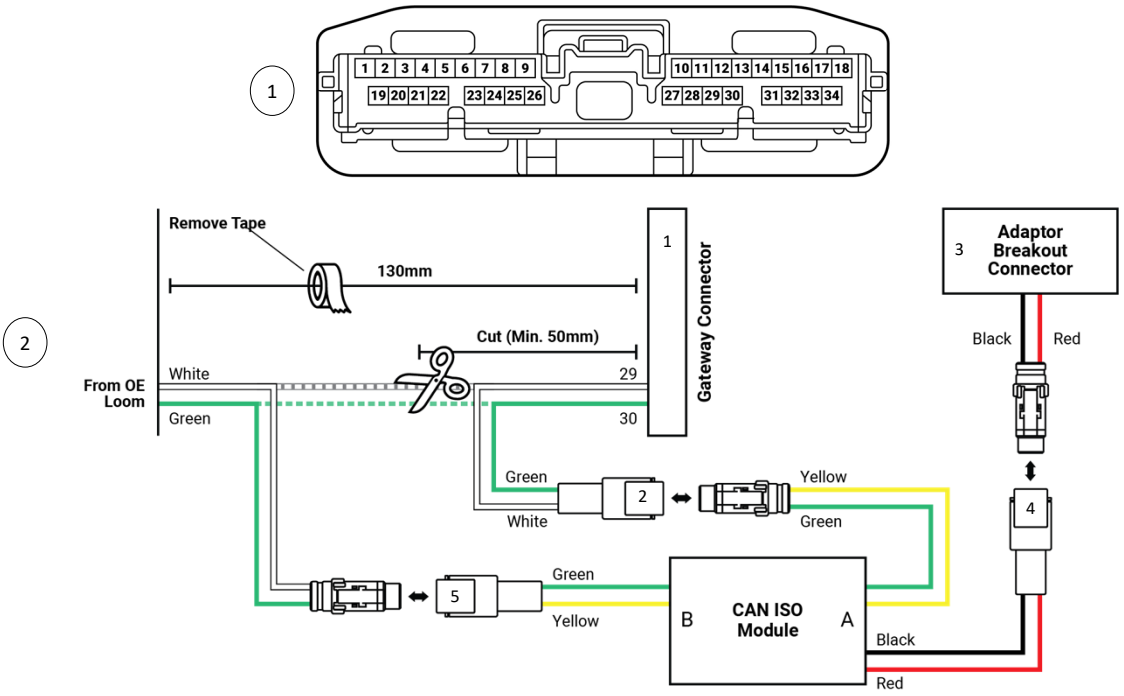

1. OE CAN gateway connector.
   - Viewed from pin side of connector
   - Pin 29 White wire
   - Pin 30 Green wire

2. MoTeC CAN ISO gateway wiring schematic.

   NOTE: The CAN ISO power loom is connected to the adaptor breakout connector. Refer page 29.

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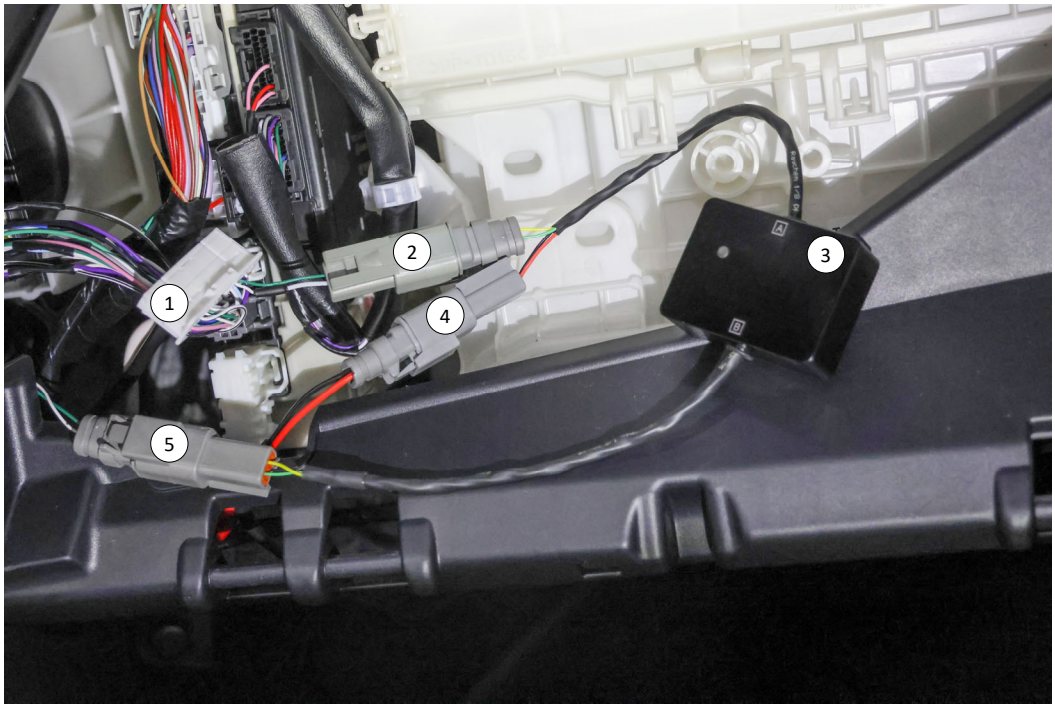

CAN ISO gateway wiring connections

1. OE CAN gateway connector
2. OE Gateway to CAN ISO gateway connector
3. CAN ISO gateway
4. CAN ISO gateway to Adaptor box breakout connector
5. CAN ISO gateway to OE loom

NOTE:

L/H drive vehicles will require the Power Extension loom connected into position 4.

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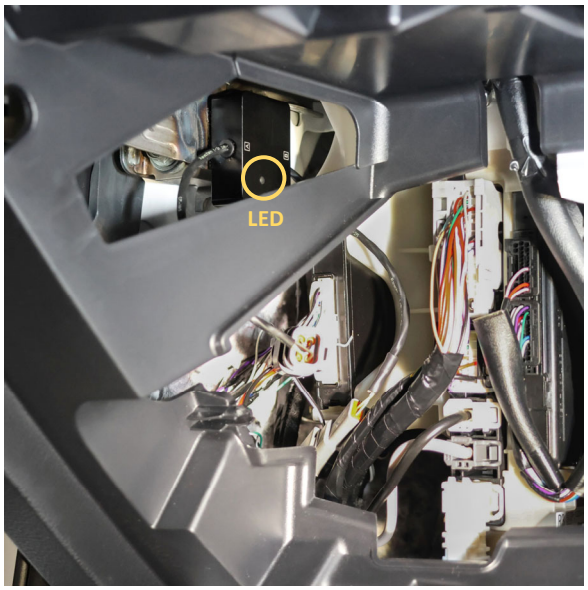

1. Cut the VELCRO DUAL LOCK into 4 x 40mm pieces.
2. Attach the pieces together and adhere them to the CAN ISO gateway as shown.
3. Remove the backing and adhere the CAN ISO gateway to the metal frame beside the glovebox opening, so the LED can be seen.

4. The LED provides the working status of the CAN ISO gateway.
   - **GREEN** = Both CAN buses are active.
   - **Blue =** One CAN bus active, one has no active traffic or is faulted.
   - **Red** = Both CAN buses have no active traffic or are faulted.

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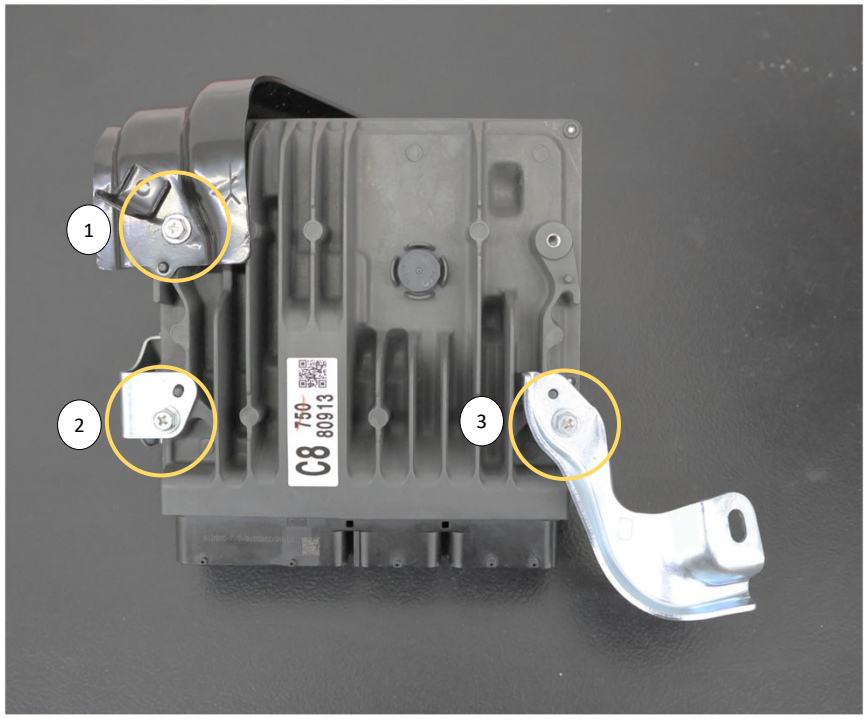

1. Remove all the mounting brackets from the OE ECU, 8mm head bolts.

- Retain bracket and bolt (**1**) for adaptor box mounting.
- Discard bracket and bolt (**2**) they will not be used for this kit.
- Retain bracket and bolt (**3**) for adaptor box mounting.

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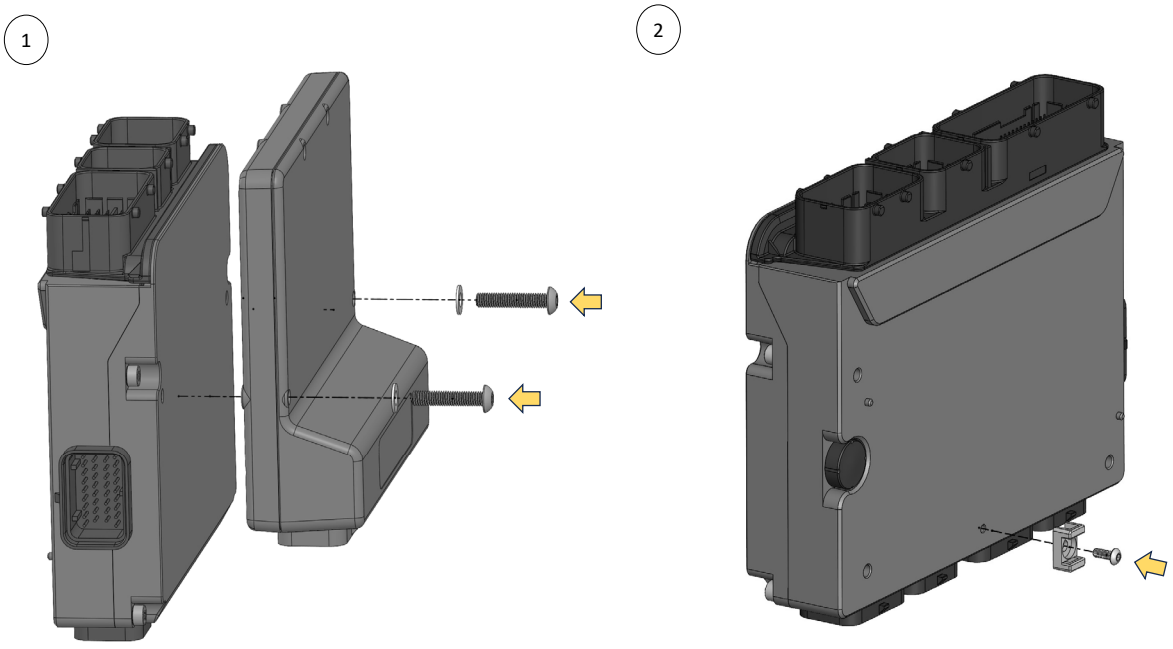

1. Mount the M142 ECU to the adaptor box using the supplied M5 bolts and M5 washers.

   NOTE: The recommended mounting torque value is 5 Nm.
   The torque value must not exceed 5.5 Nm.

2. Fit the cable tie mount to the rear side of the Adaptor box using the supplied M3 bolt.

- Fit the stub looms in the sequence shown.
- When fitting the fourth stub loom #61253, the connector with the ethernet cable must be plugged into the ECU.

NOTE:

- Using this sequence keeps the stub looms away from the engine mount when the kit is fitted.
- See page 2 for the part numbers and descriptions of the stub looms.

Secure the third and fourth stub loom to the mount on the adaptor box using a cable tie.

1. Mount the upper and lower OE brackets to the adaptor box using the OE fasteners. Refer to the removal on page 18

   The adaptor box/ ECU assembly is complete ready for fitting to the vehicle.

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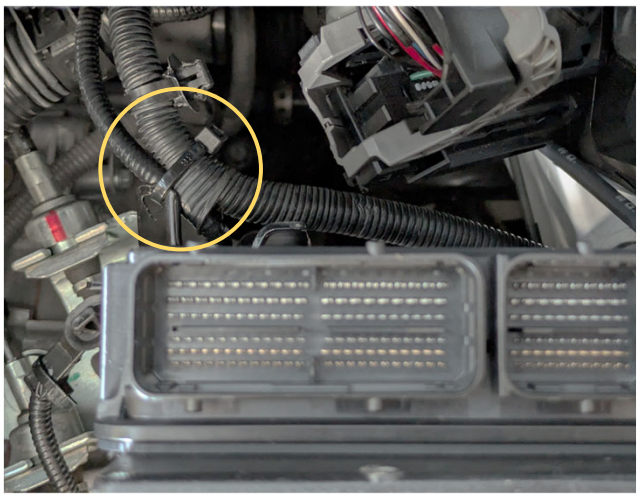
A

B



1. Remove plastic wiring loom guide from the lower ECU bracket. **A.**
2. Position the ECU/Adaptor box assembly into the engine bay.
3. Attach wiring loom with a cable tie to the lower ECU mount. **B.**

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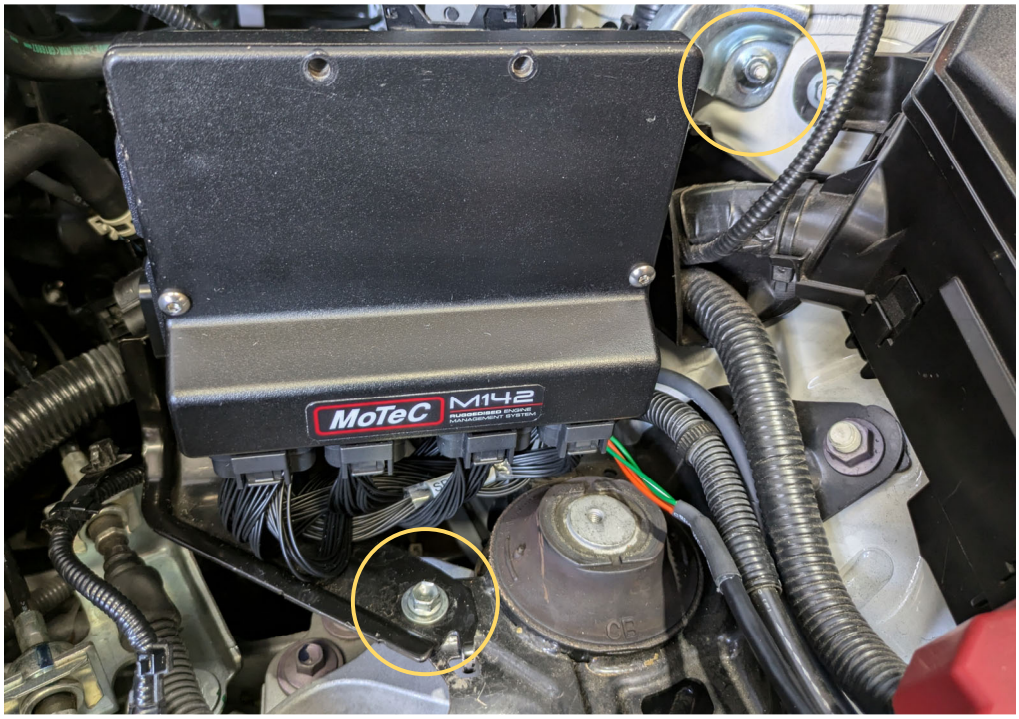

1. Align the stud on the vehicle body with the OE bracket, fit the 10mm head nut.
2. Align the lower mounting hole and fit the 10mm head bolt.
3. Check the vertical & horizontal alignment of the M1 adaptor assembly.
4. Tension the 2 x fasteners.

- Upper 10mm OE nut.
- Lower 10mm OE bolt

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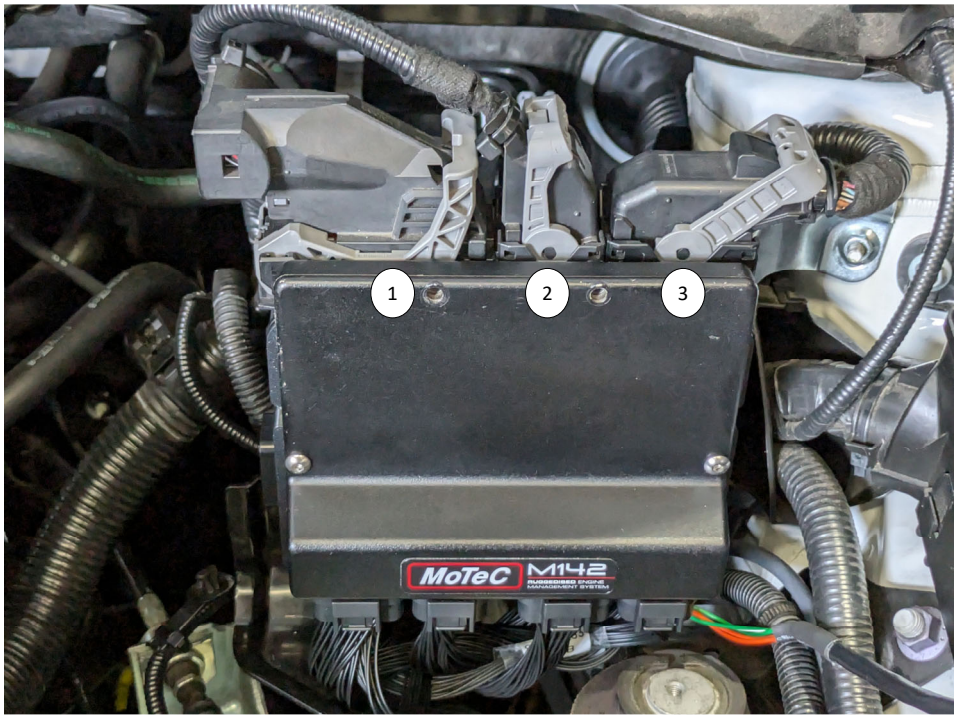
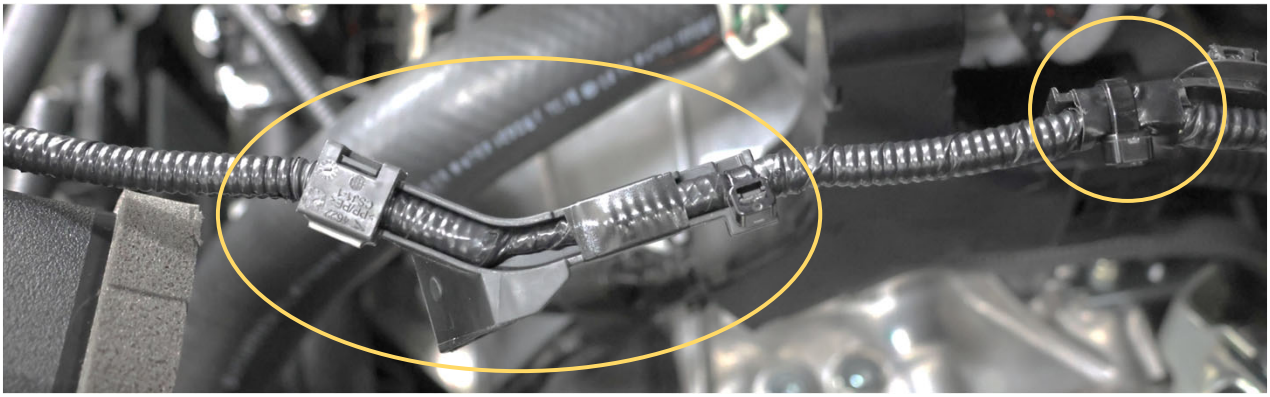


1. Fit the 3 x OE ECU plugs onto the GR Corolla adaptor box in the order shown.

NOTE:

- Ensure the grey levers are locked into place.
- Carefully inspect all the wiring to ensure adequate clearance to other components.



1. Remove 2 x wiring mounts from the MAF sensor wiring loom.

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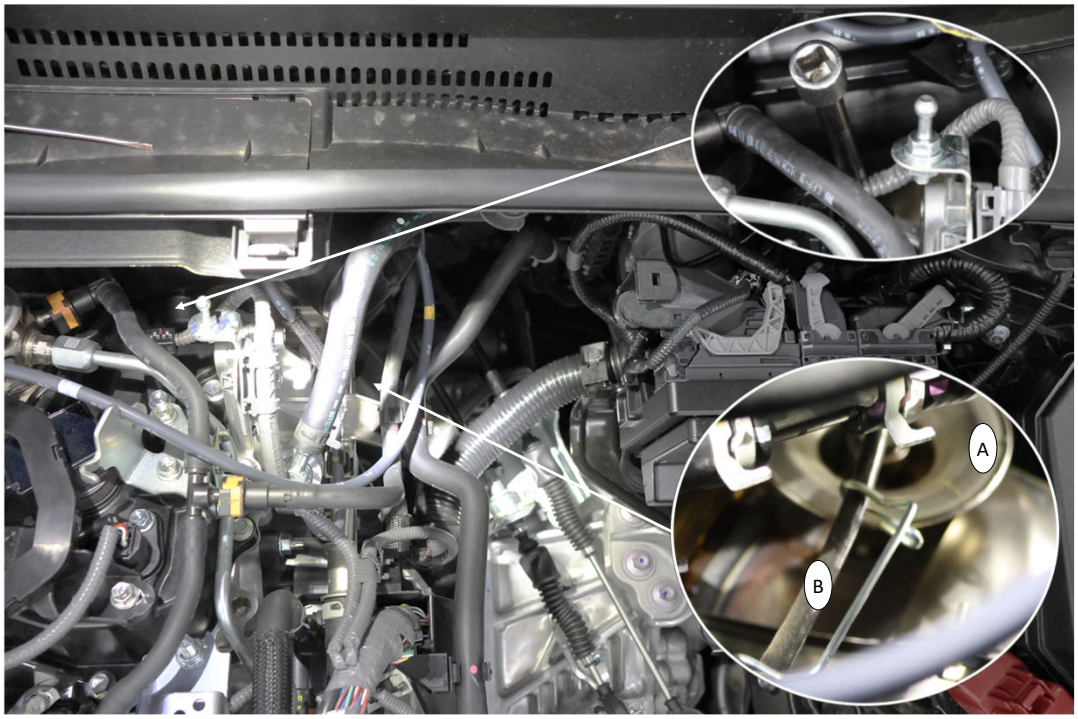

Remove the OE Lambda sensor.

1. Disconnect the Lambda sensor wiring connection.
2. Remove the Lambda sensor cable from the cable guide.
3. Use a long 3/8 extension, 3/8 uni joint & lambda sensor socket.
4. Reach down behind the intake manifold as shown.
5. Undo and remove the Lambda sensor.
6. Exchange the disc shaped OE heat shield onto the adaptor kit Bosch LSU 4.9 Lambda sensor.
7. Fit the Bosch sensor. Fit the cable to the cable guide.

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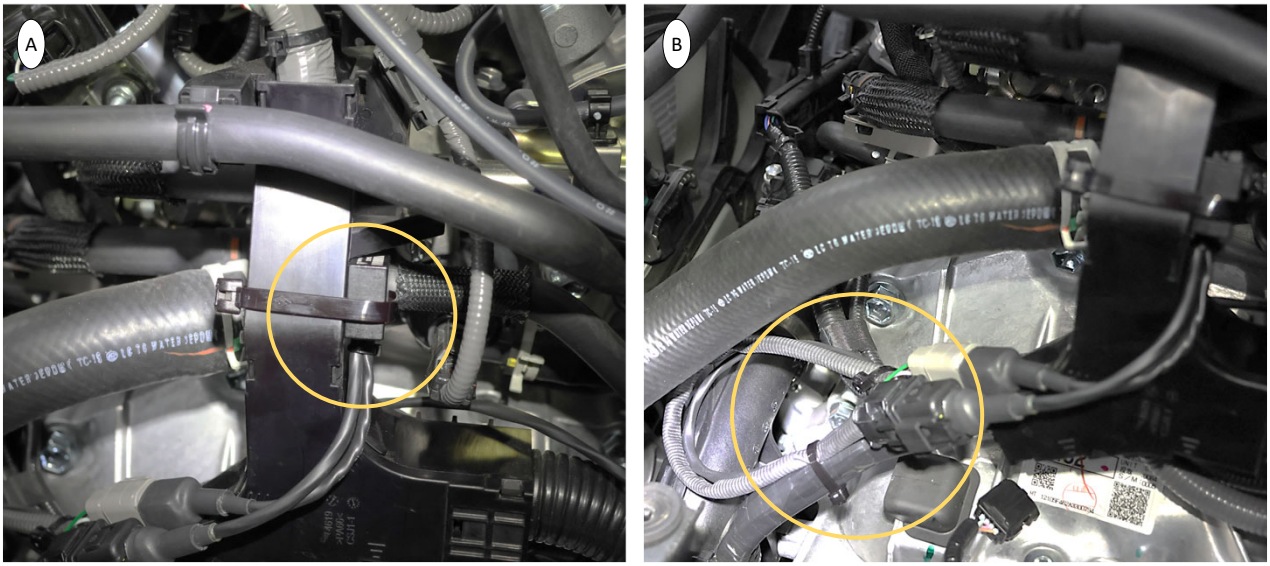

1. The LTC (61300K) can be cable tied to the plastic cable ducting **A**.
2. Connect the Bosch 4.9 Lambda sensor to the LTC connector **B**.
3. Connect the M1 Adaptor LTC loom (61430) to the LTC.
4. Connect the M1 Adaptor LTC loom to the breakout connector on the adaptor box.
5. Neatly tie the cables as shown.

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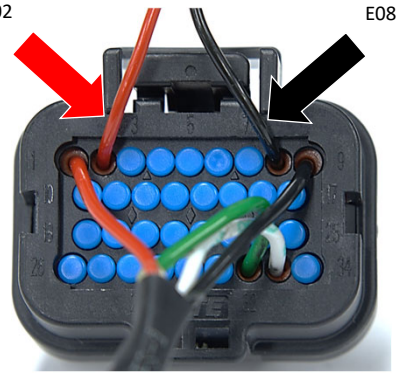
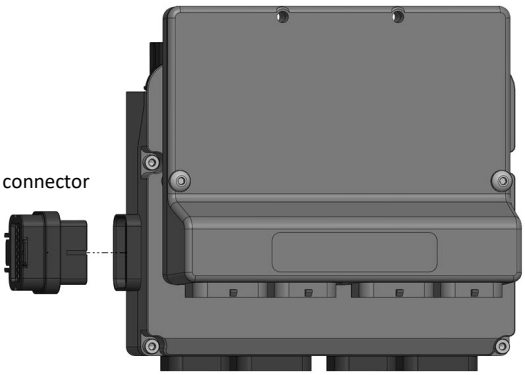
CAN Gateway loom connection at Breakout connector

Red wire Position E02

Black wire Position E08



Breakout connector



Connect the CAN ISO Gateway power from pages 14 - 16.

- **BLACK** wire into position E08.
- **RED** wire into position E02.

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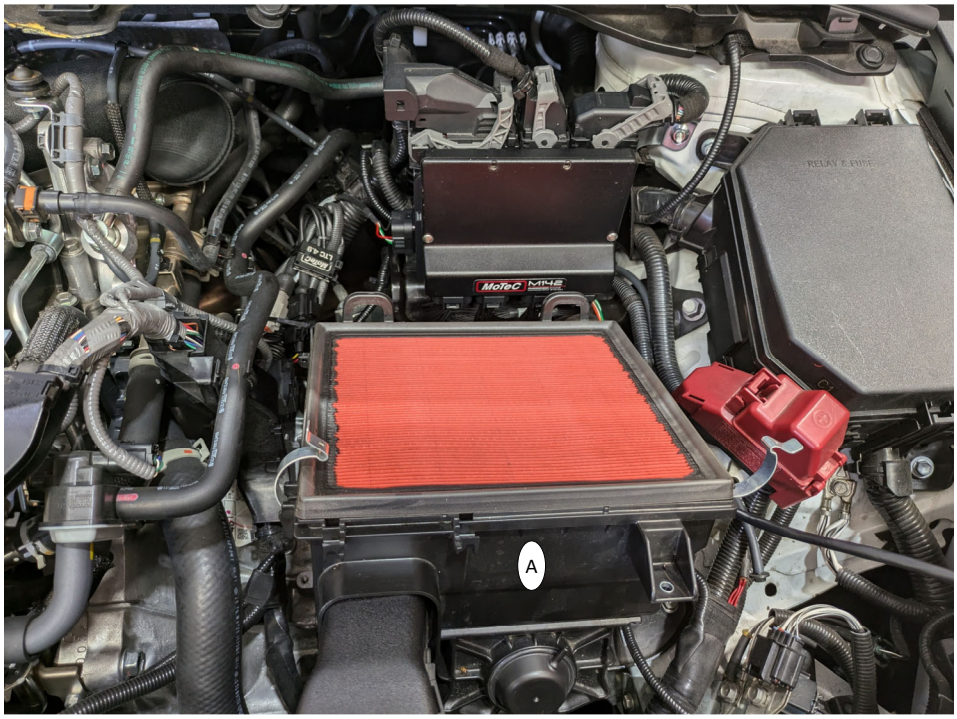

1. Carefully place the airbox lower **A** in place aligning the cold air inlet pipe.
2. Press the airbox lower into the 3 x lower mounting grommets.

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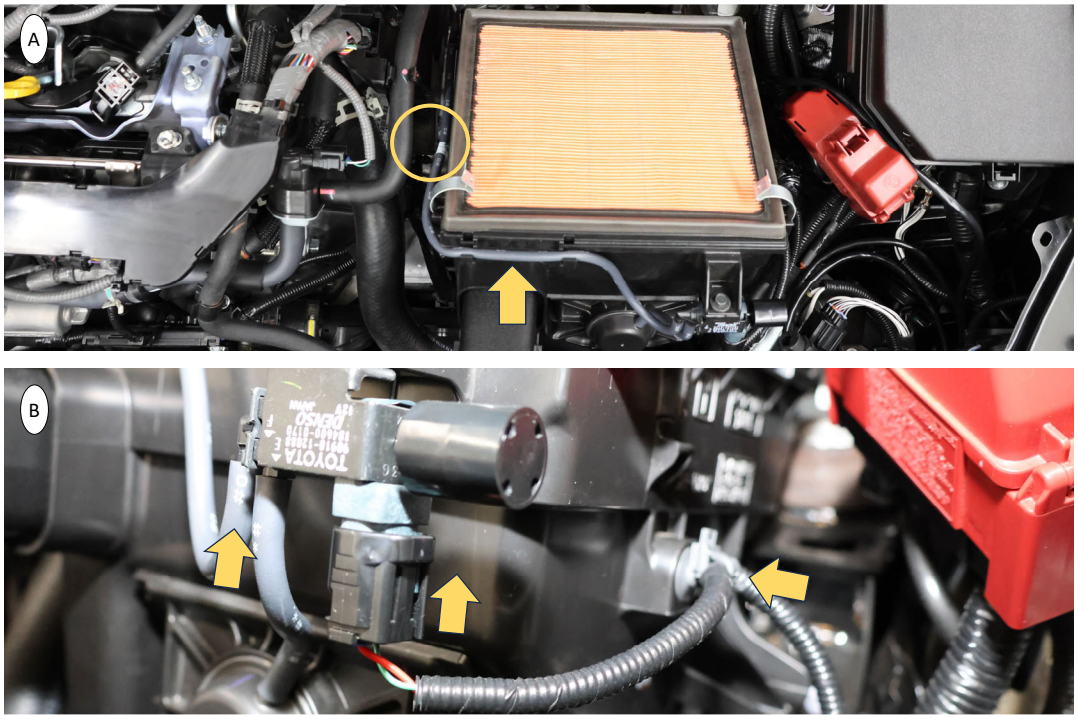

1. Route the vacuum house **A** around the airbox lower and clip it in place in 5 positions.

   NOTE: The white band on the hose (Yellow circle) aligns with a clip location.

1. Connect the vacuum hose the vacuum switch **B**.
2. Connect the wiring connection to the vacuum switch.
3. Clip in the wiring mount.

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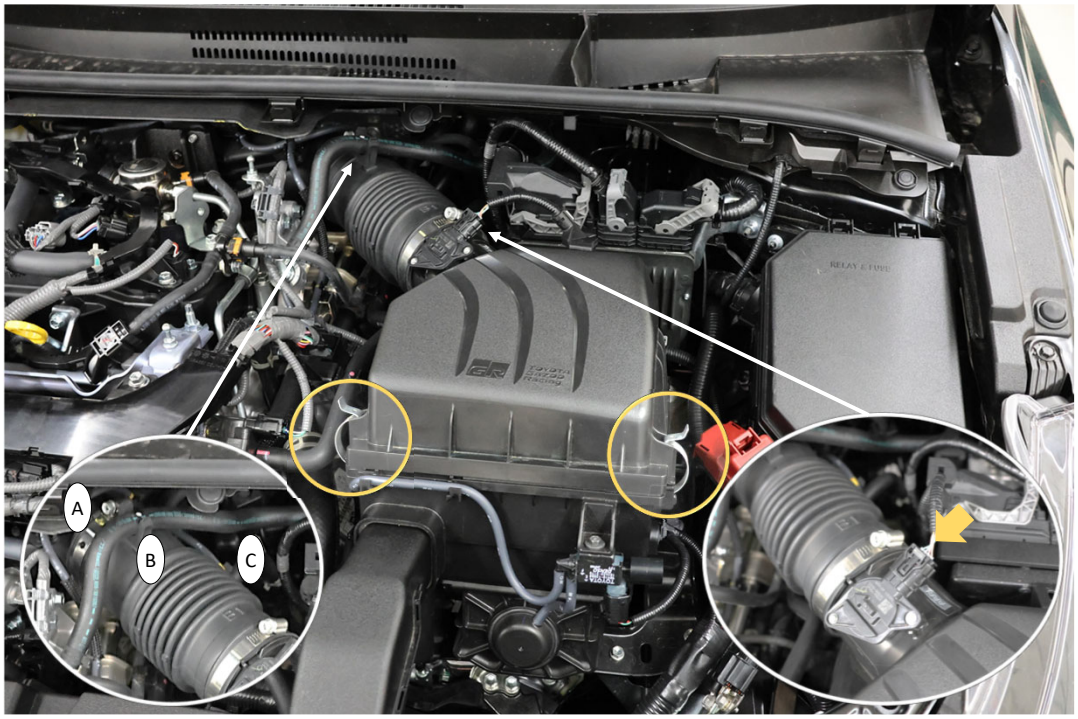

1. Place the airbox lid in position.

- Engage the two rear mounting lugs of the airbox lid with the airbox lower.
- Guide the induction tube onto the throttle body.

2. Press the airbox clips into position.
3. Tighten the Induction tube clamp **A**.
4. Position hose **B** (white dot) into its holder.
5. Position hose **C** (yellow band) into its holder.
6. Connect the MAF sensor wiring connector.

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1. Align the mounting pegs and sockets of the engine cover and its mounts.
2. Use the corners of the engine cover to press down by hand.
3. Find an accessible position in the engine bay, tie the ethernet cable away from moving parts and heat sources.