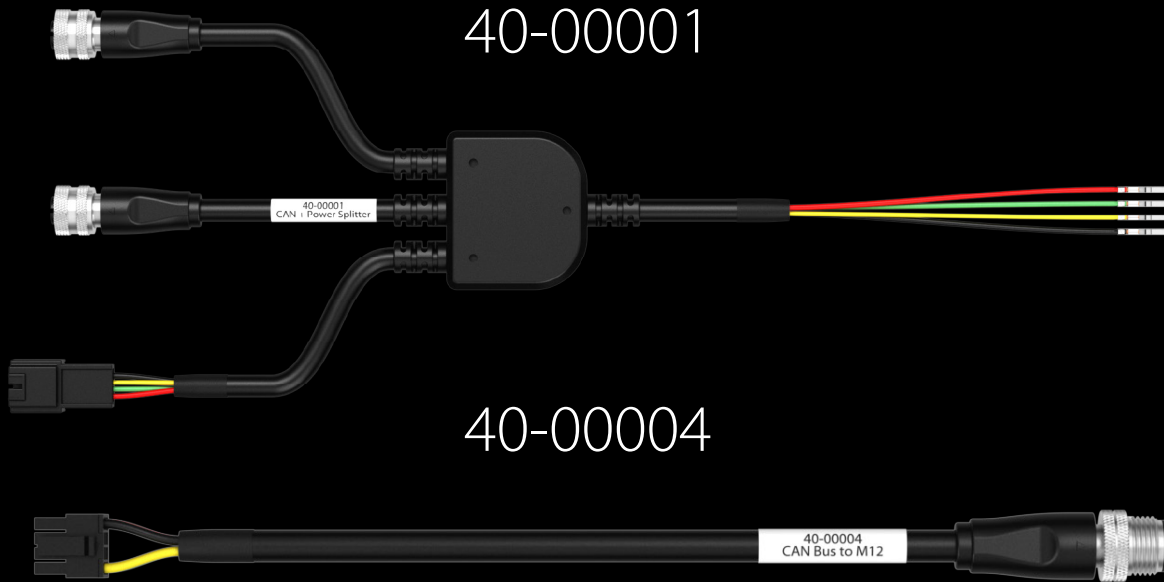


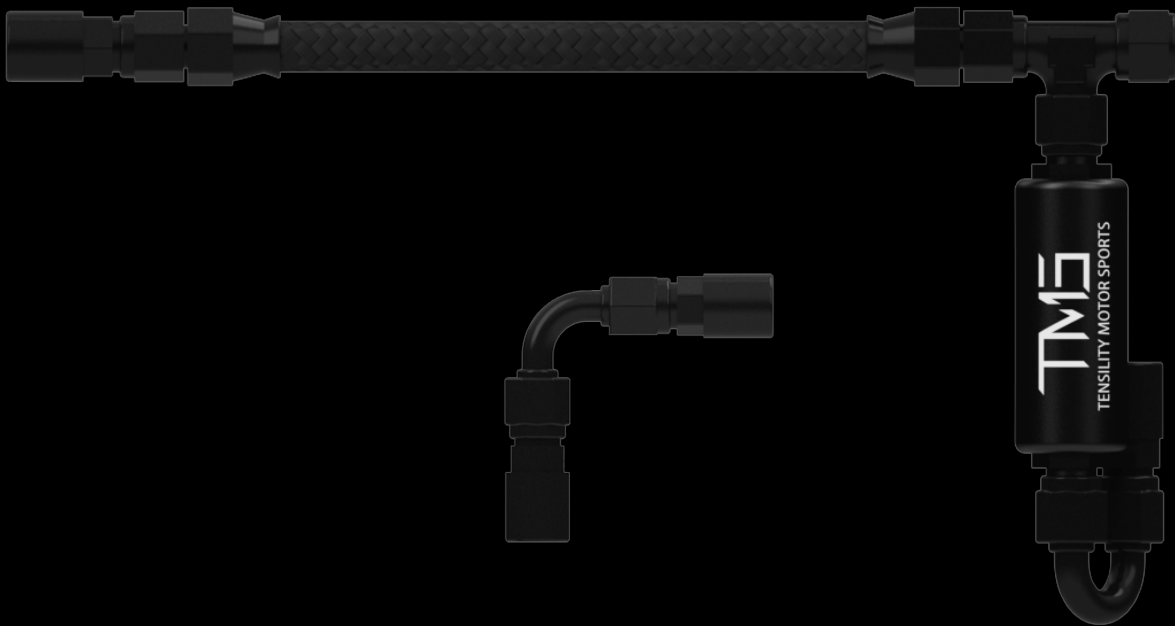
Included Kit Components



936119-1



41-00003



Additional Required Components

Available to add to your kit when ordering

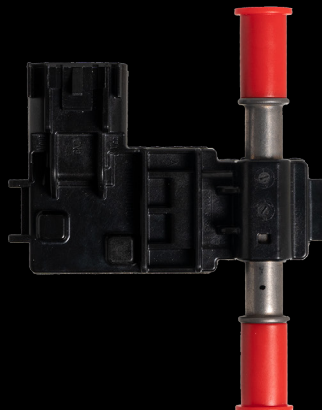
Zeitronix™ ECA-2 CAN Bus



40-00012



Ethanol Sensor (0 - 5 V)



Tools Needed for Installation



Flathead screwdriver



De-pinning tool (included)



Socket wrench w/ 10mm socket



Drill (optional)

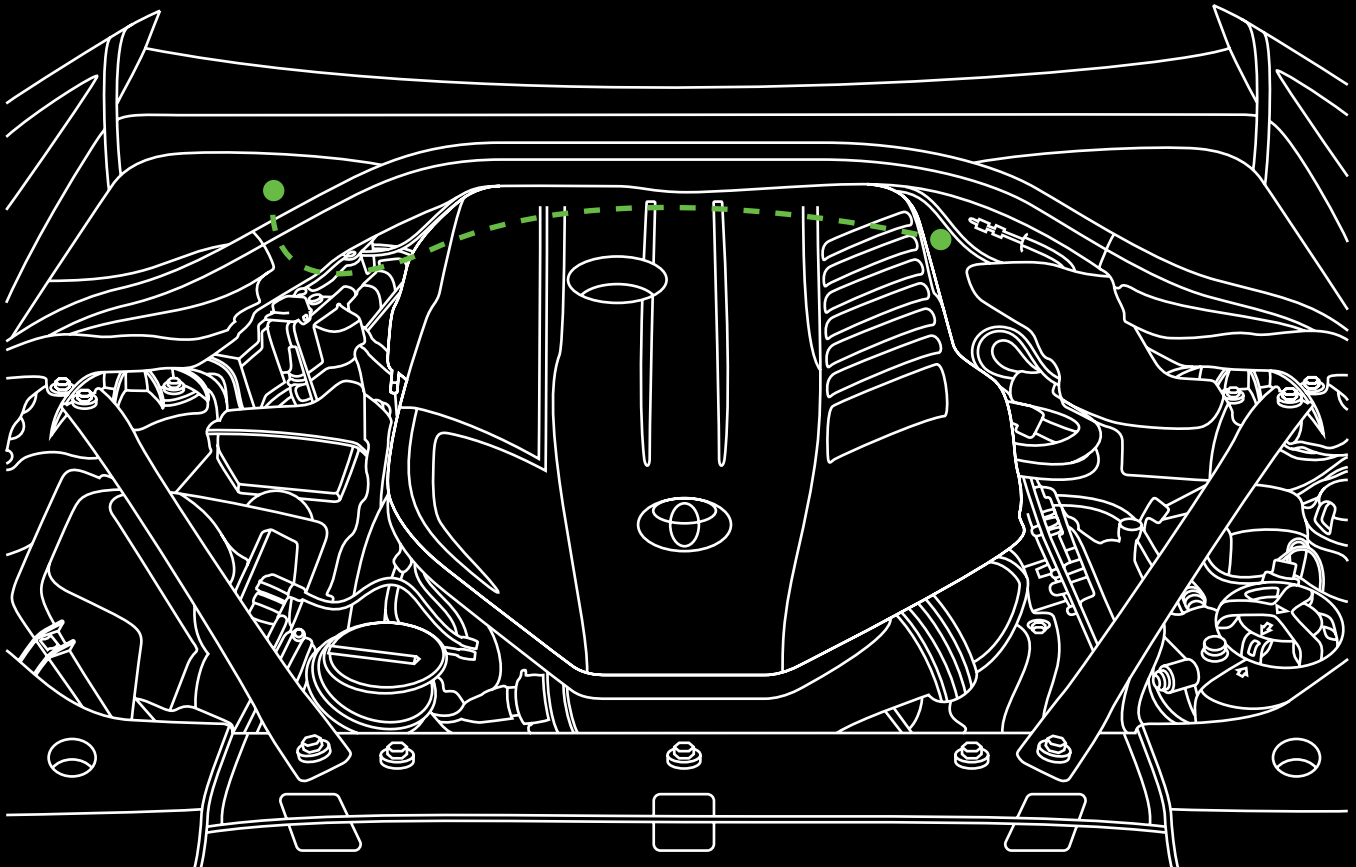


Fire extinguisher

Engine Bay Installation

The first part of the installation is in the engine bay. The engine should be off, cool, with the battery disconnected. A fire extinguisher should be available before disconnecting fuel lines.

The OEM fuel line is replaced with the TMS Fuel Line Assembly and ethanol sensor at the back of the engine bay. The new line connects directly to the OEM fuel line, and the TMS Ethanol Sensor Wire Harness (40-00012) is routed into the passenger footwell.



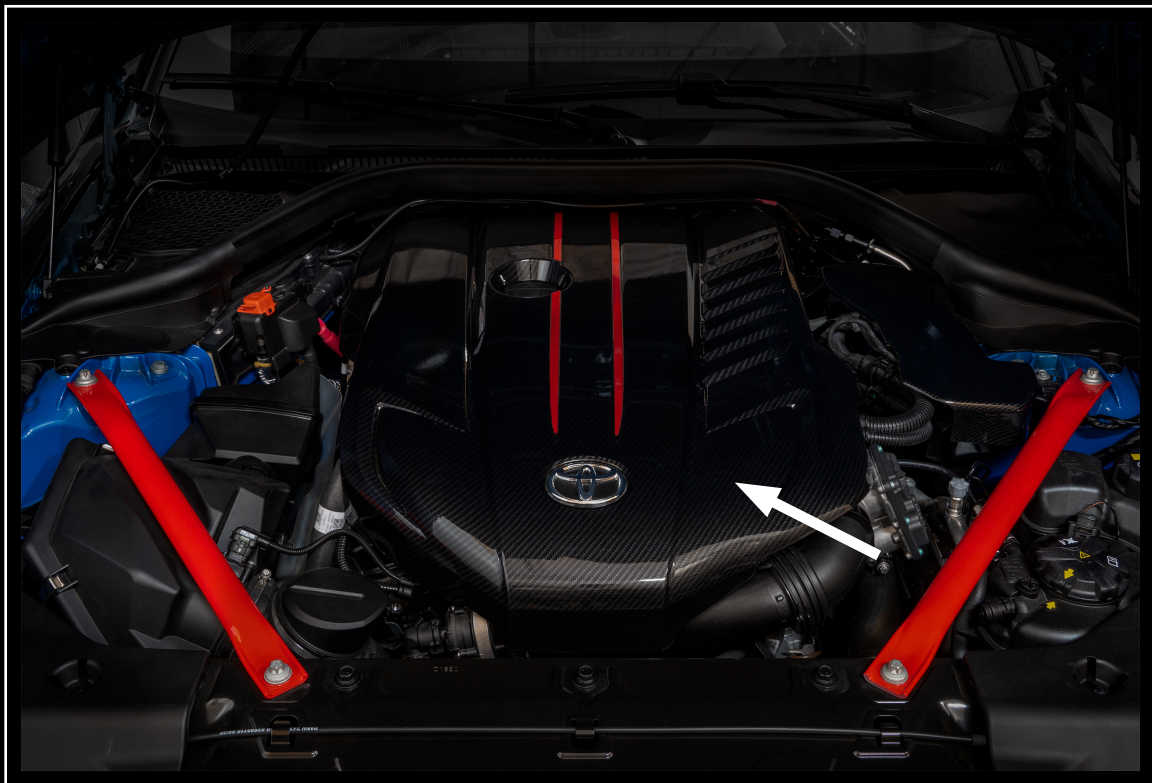
1. Disconnect the battery.*

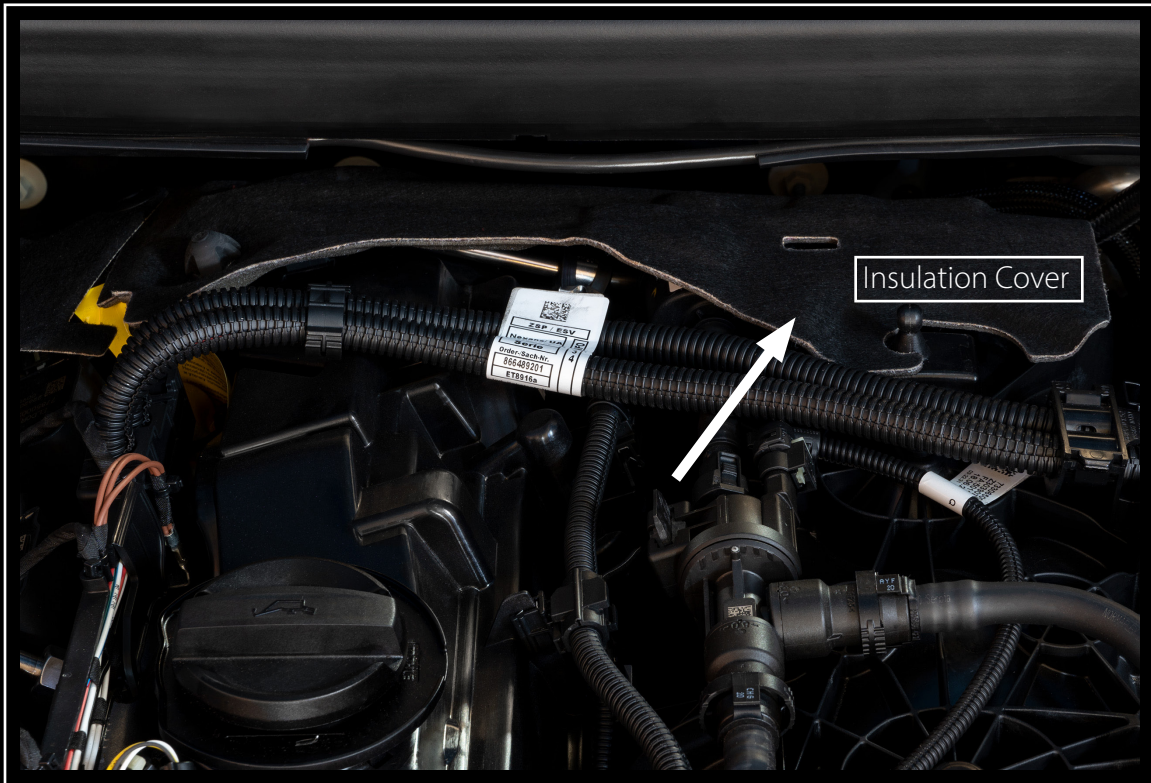
Access the battery compartment and disconnect the battery. Do this by removing the negative terminal with a 10 mm socket wrench. *Place a cloth or towel over the trunk latch to prevent accidental closing and latching of the trunk while the battery is disconnected.



2. Remove engine cover and insulation cover.

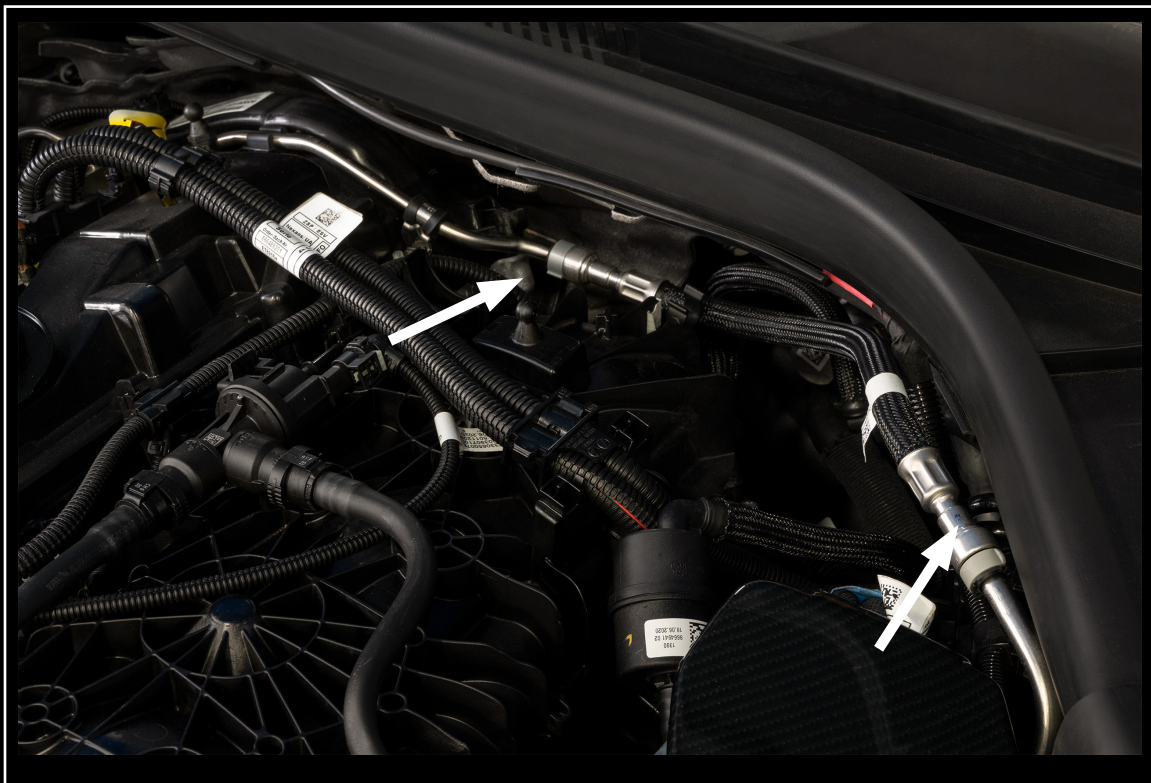
After removing the engine cover, remove the insulation cover shown on the second image below.





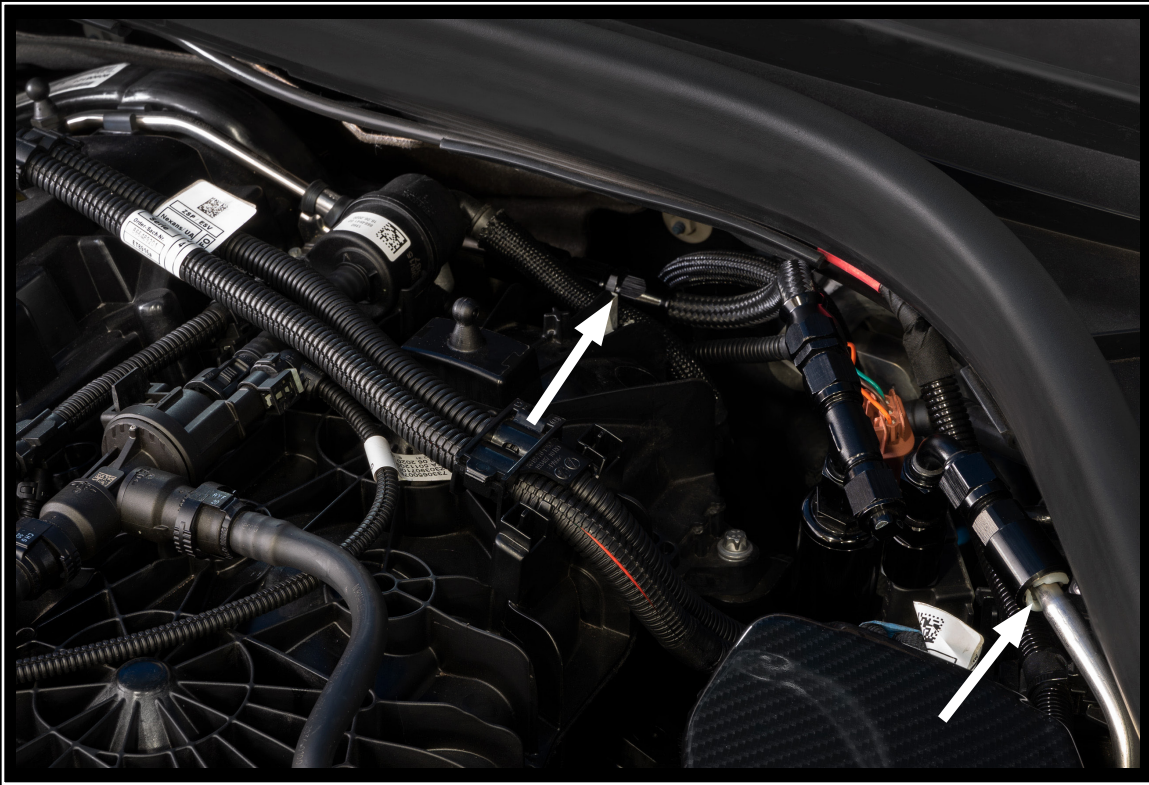
3. Remove the OEM fuel line.

Remove the plastic clips on both ends of the hose. Place a towel around each hose connection to catch any fuel that may leak from the lines. To release the fuel line, depress the plastic piece on the end of the hose, and pull away from the rigid fuel line.



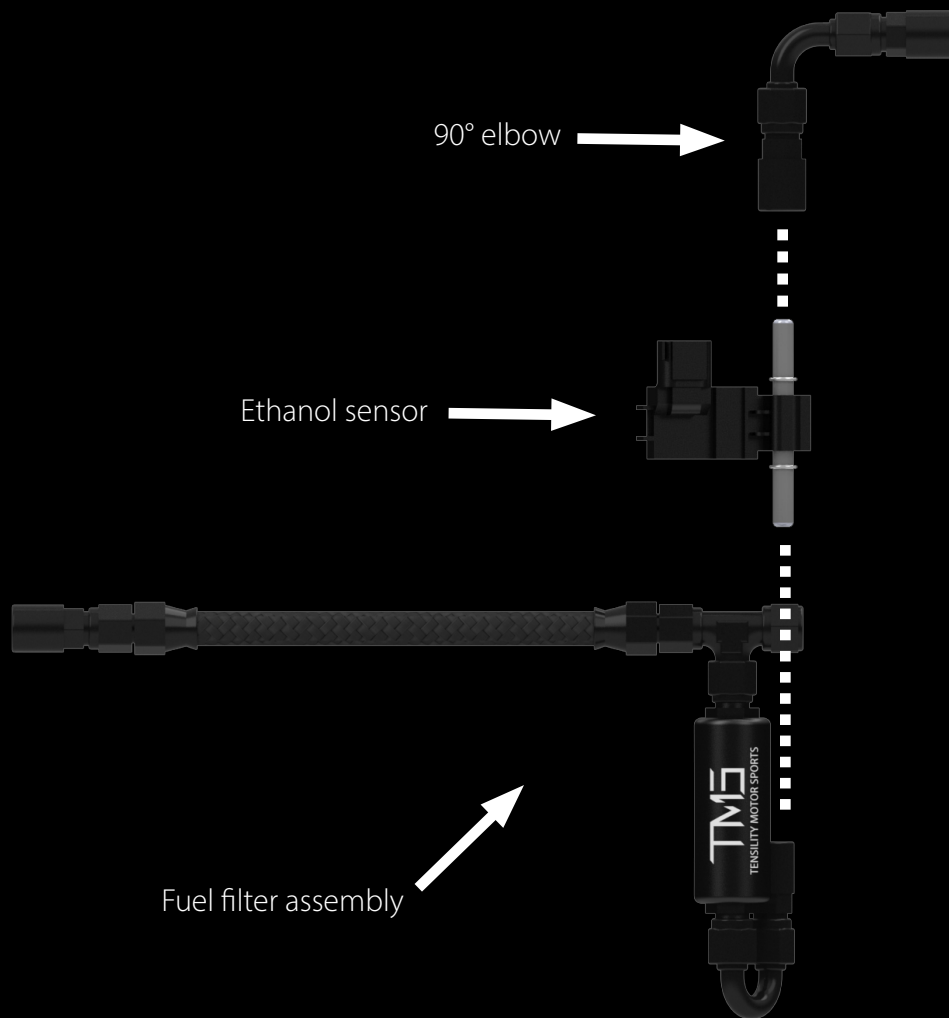
4. Install the TMS Fuel Filter and ethanol sensor.

| See assembly guide on next page.



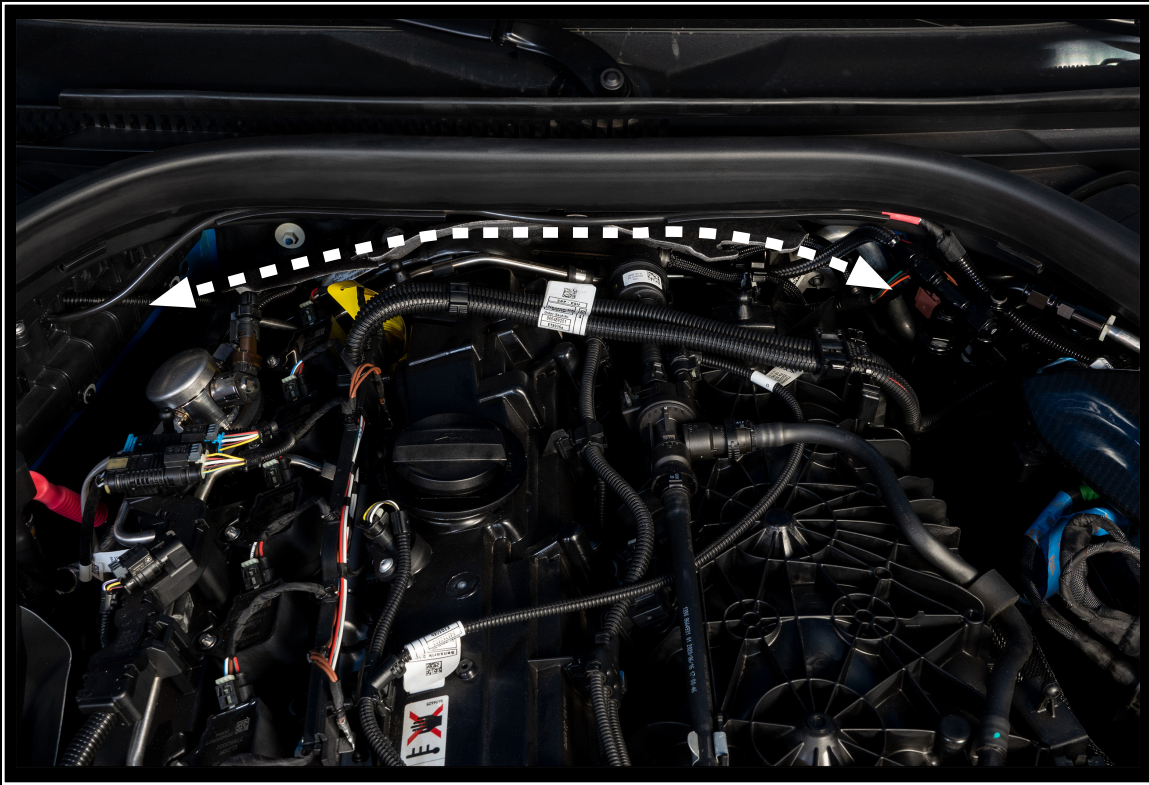
Fuel Filter Assembly

To assemble the TMS Fuel Filter (41-00001) and ethanol sensor, first connect the ethanol sensor to the larger 3/8" quick connects on the fuel line assembly until an audible "click" is heard. Next, snap the ends of the hose back into the original OEM connection points. Lastly, plug 40-00012 into the ethanol sensor.



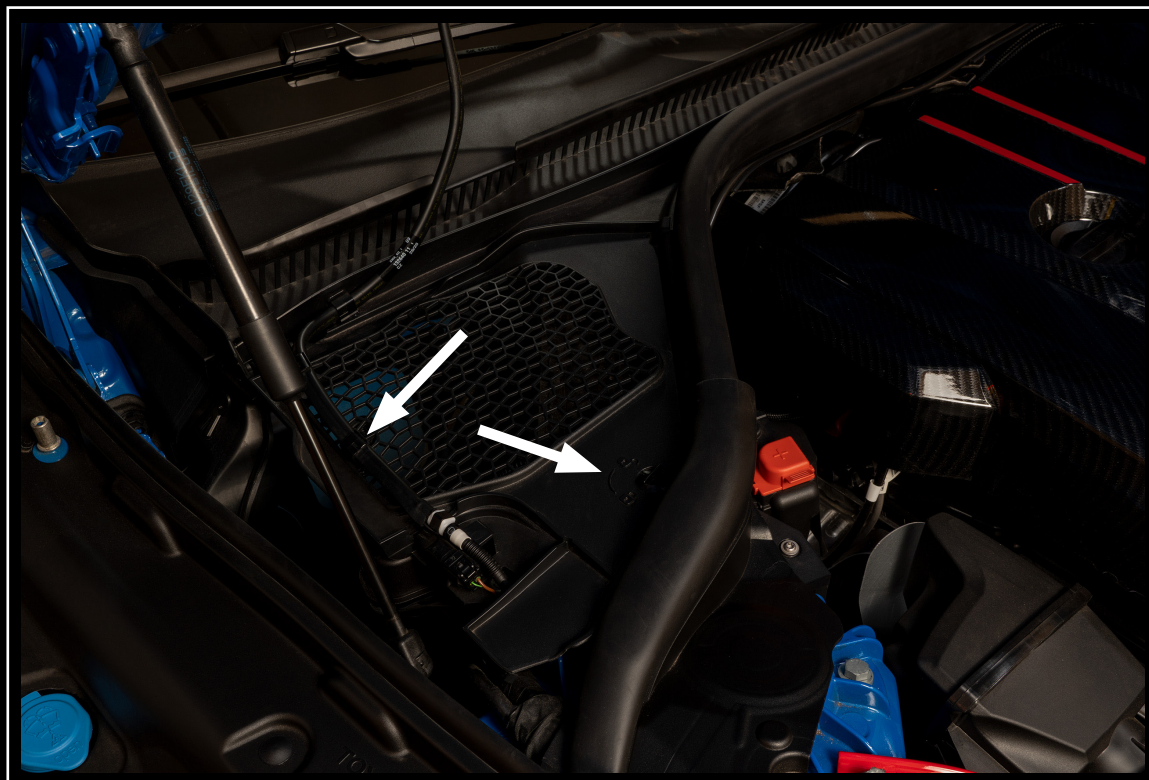
5. Route 40-00012 through the engine bay.

Connect 40-00012 to the ethanol sensor and route as shown below. This ethanol harness will then be routed into the passenger footwell.



6. Open the firewall access point.

Unlock the panel covering the firewall access point and detach the wire from the clips (see below.)

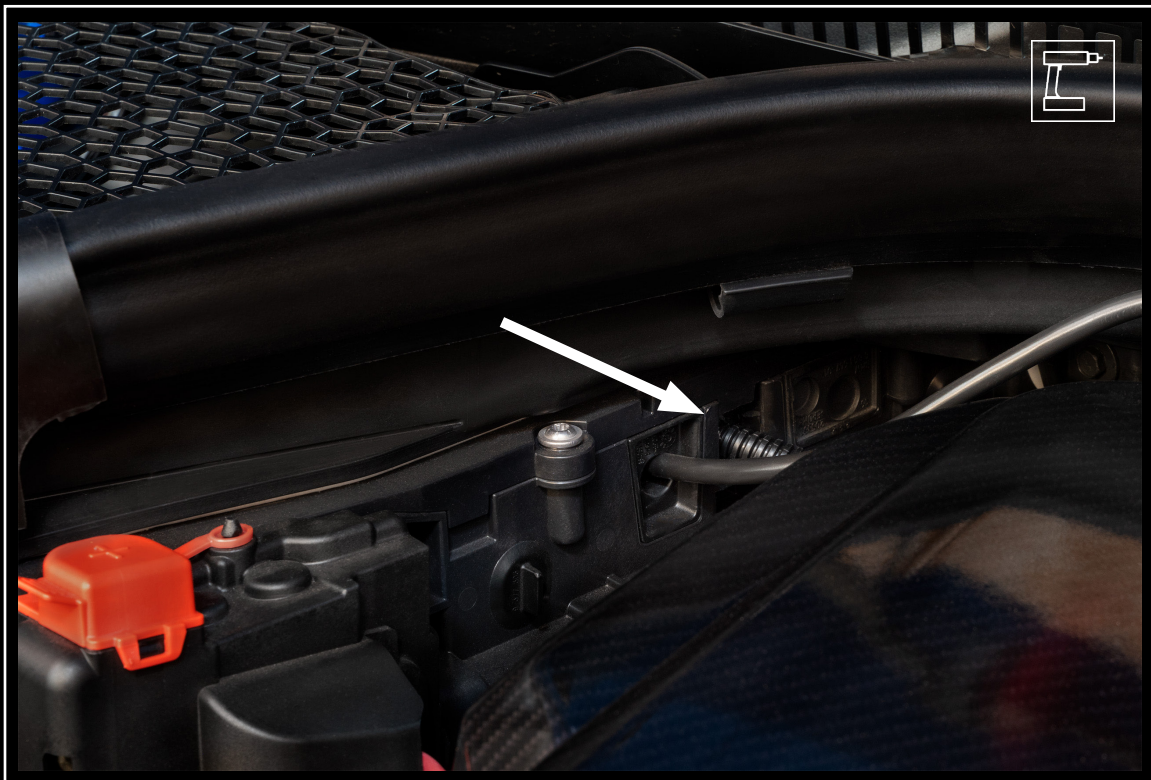


7. Route the wire harness. Choose one of the options below.

| Option 1: wrap the wire harness around the end of the engine bay weather stripping (see below.)



| Option 2: drill a small access hole for a cleaner look (see below.)



8. Puncture an access point through the firewall.

Use a sharp object or drill to puncture a hole through the fabric barrier. The hole should be large enough to feed 40-00012 into the passenger footwell.



Interior Installation

The TMS Fuel Line and ethanol sensor should now be installed with the TMS Ethanol Wire Harness (40-00012) fed through the engine bay and into the passenger footwell. Completing the electrical connections requires accessing the BDC, de-pinning 4 connections, replacing those terminals with the TMS Wire Harness, and finally connecting the TMS Wire Harness to the Zeitronix™ analyzer.



9. Remove passenger-side footwell side covers.

| Remove the side panels in the order shown below.



10. Remove passenger-side glove box panel.

| Release the two plastic fasteners shown below. This can be done with a large flat head screwdriver.



11. Pull back passenger-side carpet.

| Pull back the carpet from the front end of the car. The carpet only needs to be pulled back enough to access the BDC.

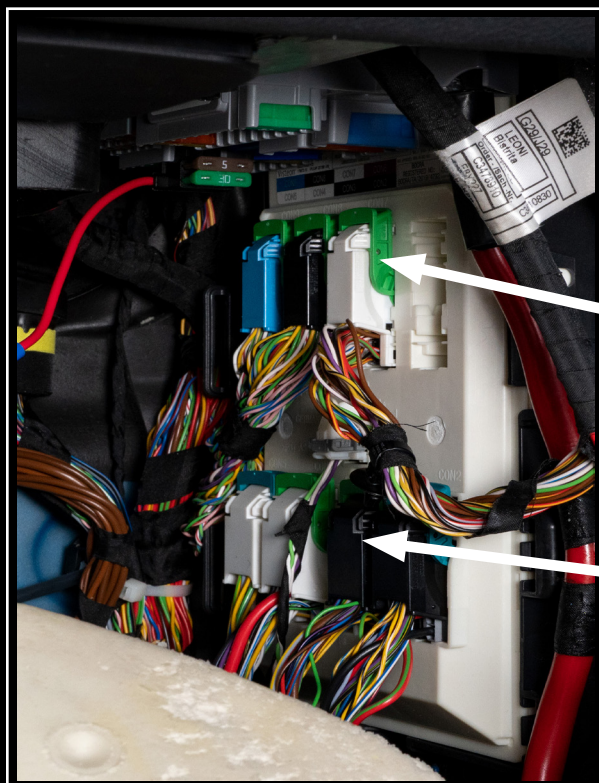


12. Unclip and remove plastic cover over the BDC.



13. Remove A258 7B and A258 3B from BDC (see location shown below.)

See step 14 for additional info on how to release the connectors from the BDC. These are the white and black housings shown below.

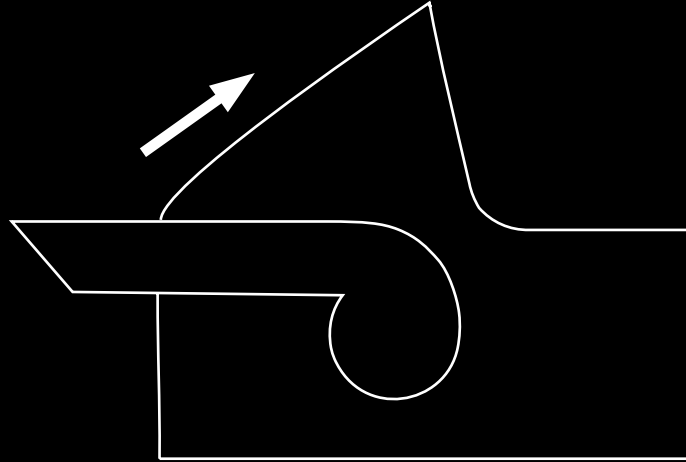


*A258 7B

*A258 3B

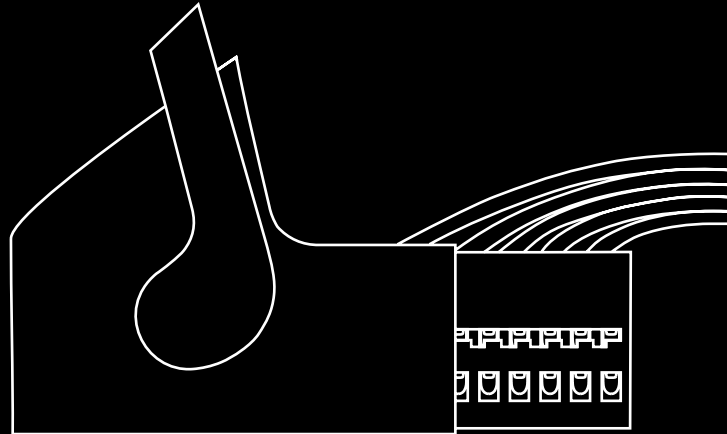
14. Release the lever.

The connector assembly should easily separate from the BDC body. The connector assembly contains the latch housing with two separate housing bodies. Please refer to the pin out diagrams in step 16 and 17 to identify which housings contain the pins you are targeting.



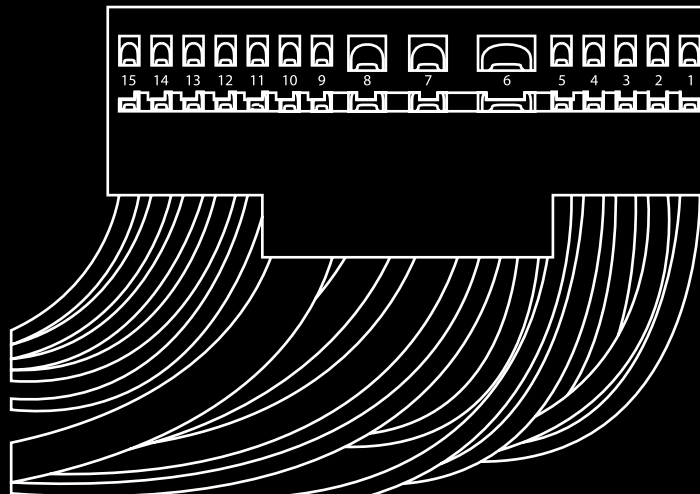
15. Remove the connectors from the housing.

Remove the blue connector from A258 3B and the black connector from A258 7B. To remove the inner connector, release the retention latches from the outer housing and slide the inner connectors out.



The connector removed from the housing will show the terminal numbers on the sides.

*This diagram is for reference only.

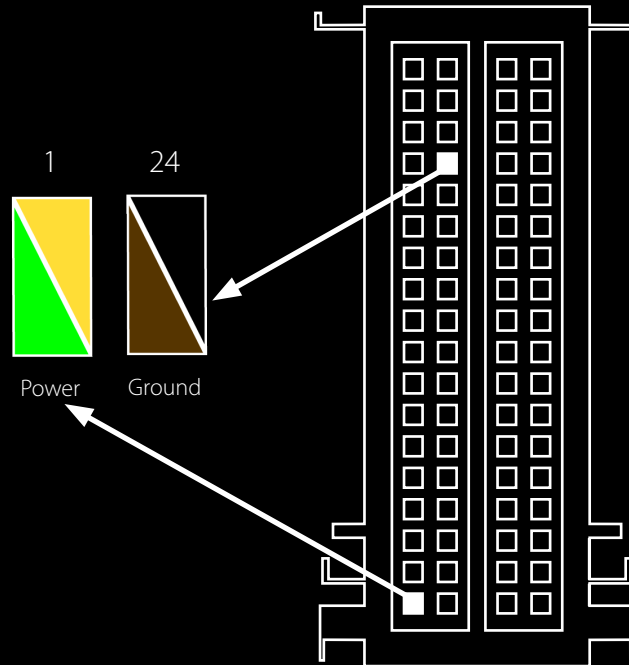


*Note:

The colors of the wires in the following steps may be different depending on the car model.

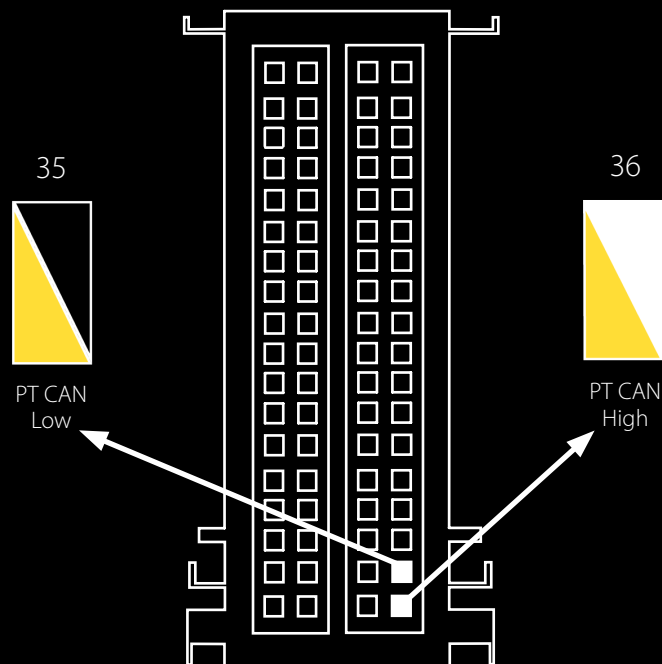
16. Locate the target terminals on A258 3B.

- I Locate terminals 1 and 24 from the blue connector (see below.)



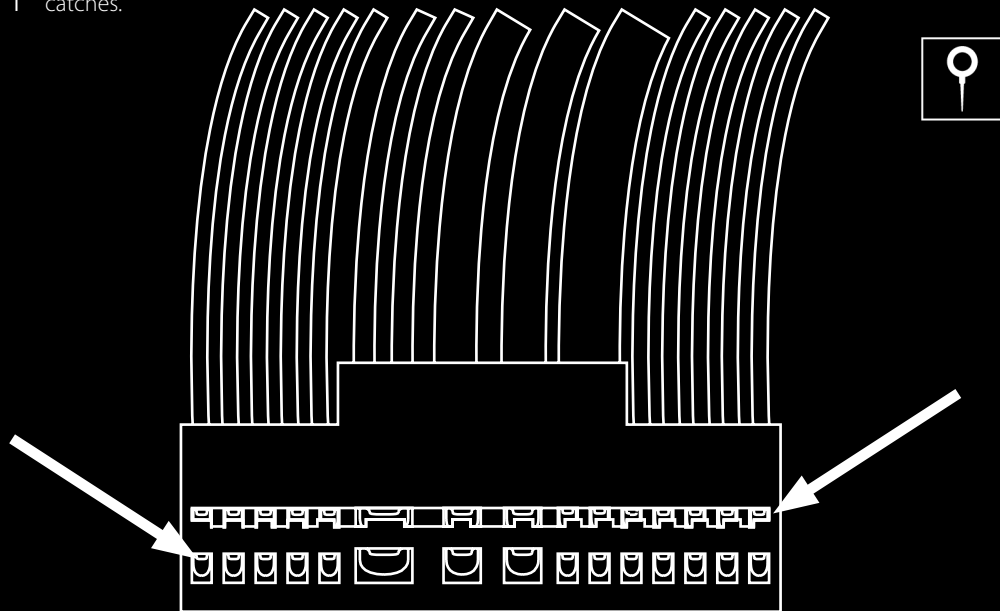
17. Locate the target terminals on A258 7B.

- I Locate the following terminals 35 and 36 from the black connector (see below.)



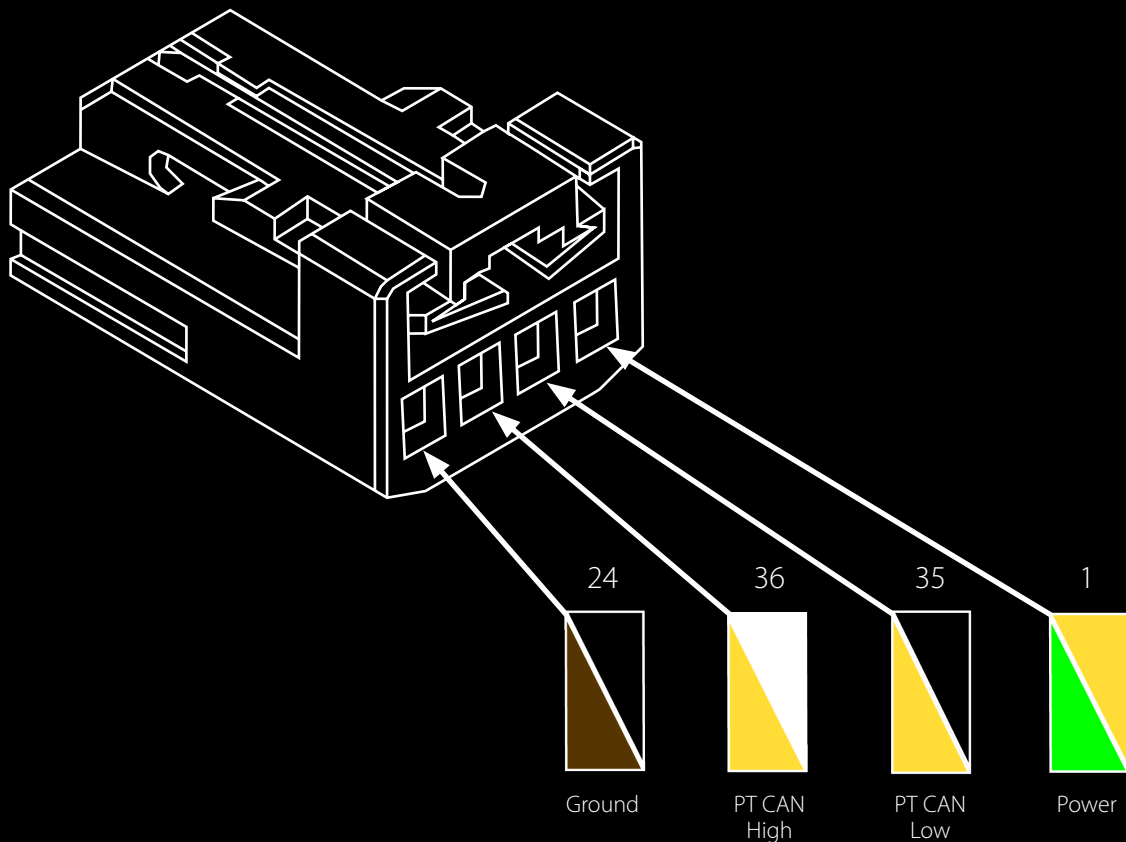
18. De-pin terminal 1 and 24 from A258 3B as well as 35 and 36 from A258 7B.

Using the pinout diagram (step 16 and 17), de-pin the terminals using a de-pinning tool to depress the terminal tab while gently pulling the wire away from the housing. Repeat for the second slot if the tab catches.



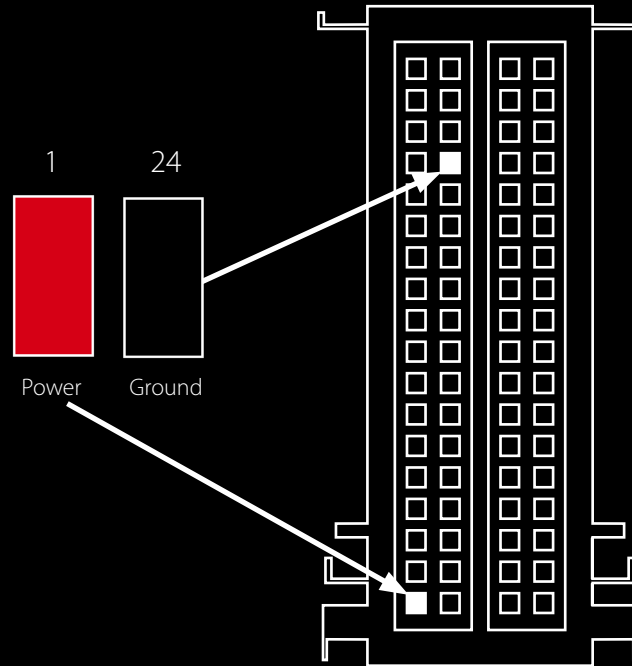
19. Remove the white locking clip from the reverse side of connector housing 936119-1. Insert the de-pinned terminals into the connector housing.

Please refer to the following diagram for proper positioning.



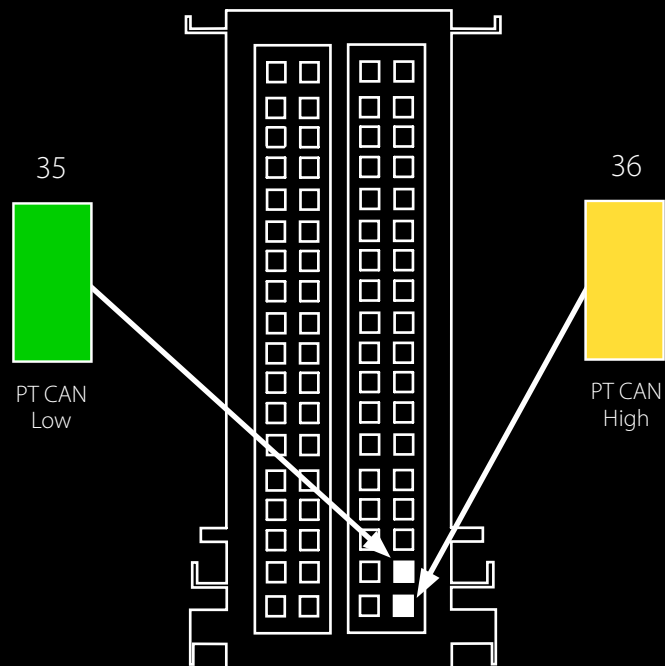
20. Install 40-00001 power and ground terminals into A258 3B housing.

Insert the terminals from cable 40-00001 into the open slots of the connector according to the below diagram. Terminals should click in place. With cable 40-00001 connected to A258 3B, replace the housing in the BDC. Cable may be routed as shown in step 12 (below the BDC cover.)



21. Install 40-00001 CAN high and low terminals into A258 7B housing.

Insert the terminals from cable 40-00001 into the open slots of the connector according to the below diagram. Terminals should click in place. With cable 40-00001 connected to A258 7B, replace the housing in the BDC. Cable may be routed as shown in step 12 (below the BDC cover.)

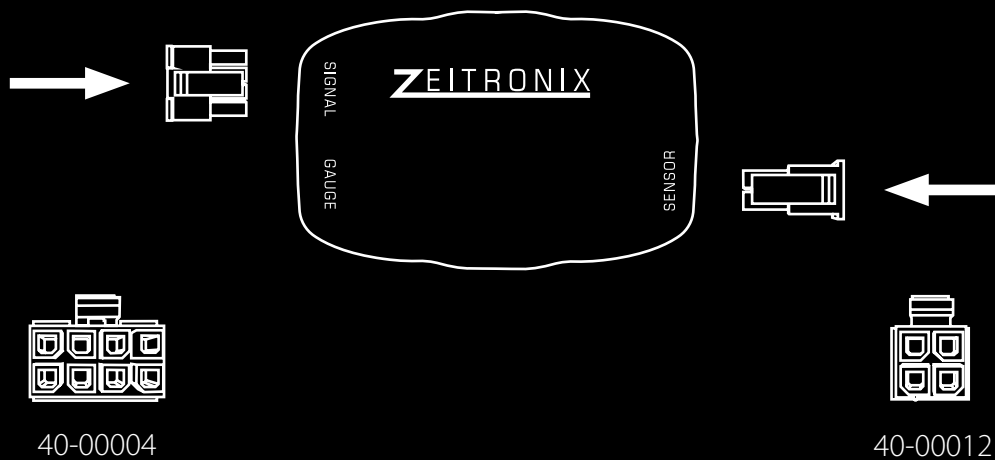


22. Reconnect A258 3B and A258 7B.

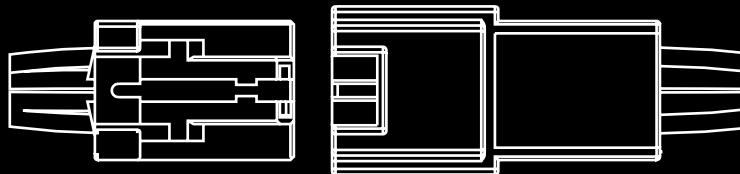
| The connectors are fully secure when the lever is in the upright position.

23. Connect 40-00004 and 40-00012 to the Zeitronix™ CAN bus Module.

| Connect 40-00004 to the signal input and 40-00012 to the sensor input.

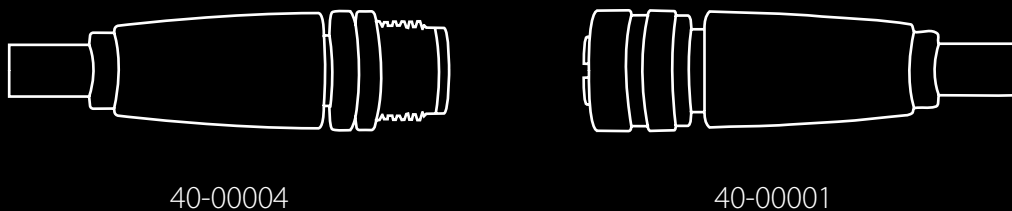


24. Connect the 936119-1 connector (shown in step 19) to 40-00001. Replace the white locking clip on the 936119-1 connector, and push the clip forward.



25. Connect cable 40-00004 to 40-00001.

| Thread the 40-00001 circular connector into 40-00004 until tight. 40-00004 may be connected to either connection port on 40-00001.



26. Reinstall the BDC cover.

| Cable 40-00001 can be arranged vertically and pressed against the BDC with the cover plate.

27. Place Zeitronix™ ECA-2 CAN bus.

| Place CAN bus module on a secure surface while ensuring no wires are twisted.



28. Reinstall the carpet to its original state.

29. Reinstall the glove box covers and side paneling.

| Install the glove box cover and side paneling in reverse order starting with step 10 then step 9.

30. Reconnect the battery.

31. Quality check.

| Turn car on and inspect thoroughly for fuel leaks. If any leaks are found, turn engine off immediately. To tighten fuel assembly fittings, disconnect battery and remove fuel line assembly. Any loose fittings should be tightened to 14 ft-lbs.

32. Installation complete!

| The car is now ready to be tuned for flex fuel capability. Caution! Installation of the TMS Flex Fuel Kit System is not intended to be used without tuning from a trusted BMW™/Supra™ tuner. Do not attempt to exceed the manufacturer's suggested fuel ethanol content (E85) without first tuning for its proper use.