VIRTUAL LINK – INSTALLATION GUIDE

Product: Pinnatec Auto Virtual Link B1

Vehicle Scope:

Audi D5, B9, C8, 4M, 4M8, e-tron models

Porsche Cayenne

Lamborghini Urus

Version: v1.0

Pinnatec Auto

https://pinnatecauto.com

Support: https://pinnatecauto.com/support/

A Note From Pinnatec Auto

Thank you for being one of the early Virtual Link B1 owners and helping support the launch of this platform.

This guide was built to cover several Audi chassis and body styles, and some vehicles may have small differences in trim layout, access panels, or factory harness routing. If anything during the install does not match what you see in this guide, or if you are unsure about a step, stop the installation and contact Pinnatec Auto Support before continuing.

If you find an area where an added photo, note, or vehicle specific detail would help future installers, we would appreciate your feedback. Clear photos, short notes, and vehicle specific observations are extremely helpful as we continue improving the install documentation.

Thank you for helping shape the beginning of the Virtual Link B1 platform.

- Pinnatec Auto Team

Table of Contents

1. Preamble – Important Information

1.1 About this guide

This install guide is for supported Audi factory air suspension vehicles using the Pinnatec Auto Virtual Link B1 system. Please read the full guide once, start to finish, before beginning any part of the install. Vehicle layout varies by chassis. Follow the vehicle specific routing notes in this guide before routing the cabin portion of the harness.

1.2 Terms & acceptance

Installation and use of Virtual Link B1 are governed by the Pinnatec Auto Terms of Sale, Use, and Liability at: https://pinnatecauto.com/terms of sale/
By purchasing, installing, configuring, or using Virtual Link B1, you confirm that you have read and agree to those Terms.

1.3 What Virtual Link B1 is

Virtual Link B1 is an aftermarket electronic ride height controller for supported factory air suspension vehicles. It connects inline with the vehicle's factory sensor system and factory lift gate module, then allows ride height control through Pinnatec Auto software.
It is not an OEM safety device, not a repair for damaged or failing suspension, and not a substitute for proper alignment, maintenance, tires, or safe driving. You are responsible for making sure your vehicle is safe to drive after installation and after any ride height changes.

1.4 Safety & battery

- Place the vehicle in Tire Change Mode / Jack Mode before lifting.
- Disconnect the 12V battery before unplugging any suspension sensors, factory lift gate module connectors, or fuse box connections. Leaving the battery connected while connectors are unplugged may result in communication issues, stored ECU codes, warning lights, or other faults.
- After disconnecting the battery, wait 5 minutes before continuing. Do not reconnect the battery until all connectors are fully seated and locked.
- For e-tron / Q8 e-tron vehicles: do not touch, unplug, move, or modify any orange high voltage cables, connectors, covers, or battery components.
- If you are unsure or uncomfortable with electrical work, lifting the vehicle, or working under the vehicle, have a qualified technician perform the install.

1.5 Tools, time & vehicle condition

Average install time is about **1-3 hours**, depending vehicle as well as access to a motorized lift
You'll need:

- Vehicle lift or jack and jack stands
- Basic hand tools
- Torx bits / sockets as needed for underbody panels and trim
- Trim removal tools
- Flashlight or work light
- Zip ties
- Wheel removal tools if installing on RS6, RS7, or e-tron vehicles

- Included connector removal tool

We recommend:
- Heat resistant wire shielding
- Magnetic zip tie connection

Vehicle Condition: a clean, dry, well lit workspace with the vehicle parked on flat ground. For best results, start with a healthy vehicle with no existing suspension faults, low voltage issues, or known electrical problems.

1.6 Genuine product, warranty & support

Warranty and support apply only to genuine, unmodified Virtual Link B1 units installed as instructed. If anything looks different from the guide, if the vehicle behaves unexpectedly, or if new warnings appear and do not clear, stop driving and contact Pinnatec Auto Support: https://pinnatecauto.com/support/ Please include clear photos or video with your support request.

1.7 Data & privacy

Virtual Link products and apps may store local diagnostic and operational logs to support functionality and troubleshooting. If you request support, we may ask you to share logs, photos, videos, or screenshots. Any personal information is handled under the Pinnatec Auto Privacy Policy: https://pinnatecauto.com/privacy policy/

2. Step by Step Installation

2.0 An Overview of the Install

The installation is split into two main parts:

1. Under the car

Sections 1 and 2 plug inline with the suspension sensors near each of the four wheels. Section 1 connects at the front sensors and routes rearward. Section 2 connects at the rear sensors, joins to Section 1 under the car, then routes through a factory rear grommet and connects to Section 3 inside the trunk.

2. Inside the car

Sections 3 and 4 connect to the fuse box / power connection, the factory lift gate module, and the Virtual Link B1 module.

Vehicle Route Guide

Before continuing, find your vehicle route letter below. Each step in Section 2 will be marked with route letters. Follow the steps marked with your letter and skip the steps that do not apply.

It's recommended that you print out the guide and circle the section 2 steps required for your route letter.

Route	Vehicle / Platform	Section 2 Steps to Follow
A	C8 A7 / S7 / RS7	1–10, 12–15, 18–23
B	D5 A8 / S8 | C8 A6 Sedan / S6 Sedan	1–8, 10, 12–15, 18–23

C	4M Q7 / SQ7	1–8, 10, 12–14, 16, 18–23
D	4M8 Q8 / SQ8 | Cayenne | Urus	1–8, 10, 12–14, 17–23
E	C8 A6 Avant / S6 Avant / RS6 Avant	1–10, 12–14, 16, 18–23
F	B9 Q5 / SQ5 | B10 Q5 / SQ5	1–8, 11–15, 18–23
G	e-tron / Q8 e-tron	1–10, 12–15, 18–23

2.1 Prep the car and battery. A B C D E F G.

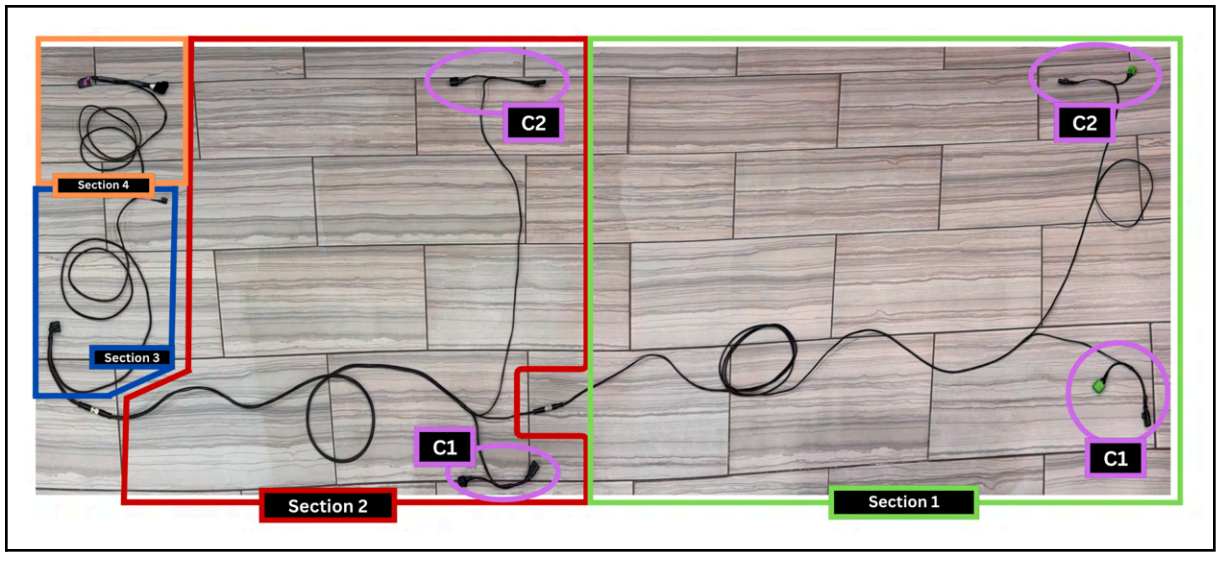
- Open the trunk or hatch.
- Place the vehicle in Tire Change Mode / Jack Mode.
- Lift the vehicle completely and support it safely.
- Turn the ignition fully off and keep the key away from the vehicle.
- Disconnect the 12V battery.
- Wait 5 minutes before continuing.

Never work under a vehicle without proper support from jack stands. Audi Tire Change Mode / Jack Mode is known to be unpredictable and may turn itself off at times.

2.2 Lay out the harness. A B C D E F G.

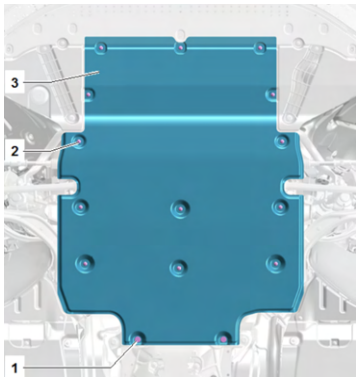
Before installing anything, lay out the full Virtual Link B1 harness and confirm the orientation based on section labeling. Understand that:

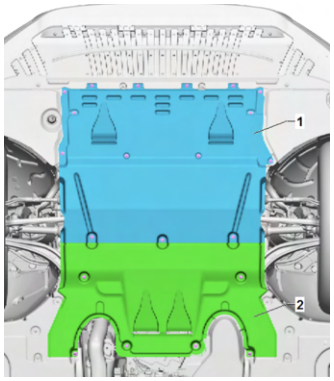
- Section 1 goes under the front axles of the car and runs down the length of the car to the rear.
- Section 2 goes under the rear axles of the car and connects to section 1. It runs rearward and up into the trunk.
- Section 3 exists in the trunk behind the driver side trunk wall (b9 users behind the passenger side trunk wall). It connects to section 2 as well as Virtual Link, and the fuse panel.
- Section 4 connects to section 3 and plugs into the factory lift gate module

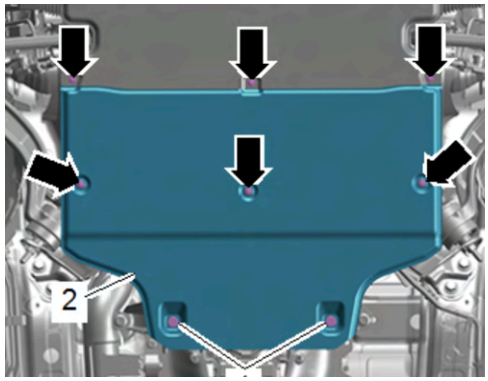


2.3 Remove the front underbody panel. A B C D E F G .

Remove the rear of the two front undertrays located under the transmission. If your car has only one large under tray, remove the entire undertray.
This gives better access to the front suspension sensor area and allows the harness to be routed across the car side to side as well as rearward.

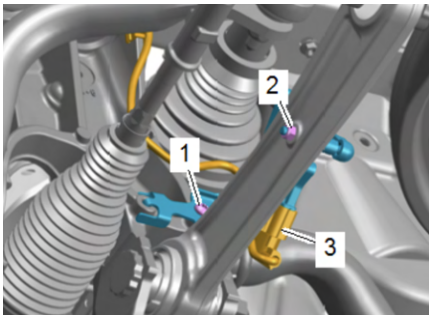






2.4 Install Section 1 at the front suspension sensors. A B C D E F G .

Locate the two front suspension sensors. These are the sensors connected to the control arms on each of the corners of the car with little links that (often replaced with aftermarket lowering links) move up and down.



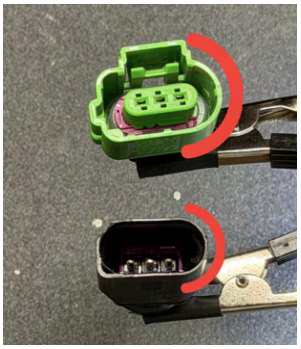
Install Section 1 inline at both front sensor locations.

Routes A B C D E G:
C1 is to be plugged in on the driver side, C2 is to be plugged in on the passenger side.
Route F:
C2 is to be plugged in on the driver side, C1 is to be plugged in on the passenger side.

At each sensor:

- Start at C1
- For this step, use your included red handled connector tool that we have supplied in the box. Sliding it behind the latch portion at the base of the connector will help in removing each connector.
- Unplug the factory connector from the suspension sensor.

- Plug the factory green connector into the matching Virtual Link harness connector. Be mindful of the orientation of the green connector and its mating connector as these are easy to invert.. Make sure both of the two connectors have their semicircular sections lined up. Listen for a click and tug to test secureness.



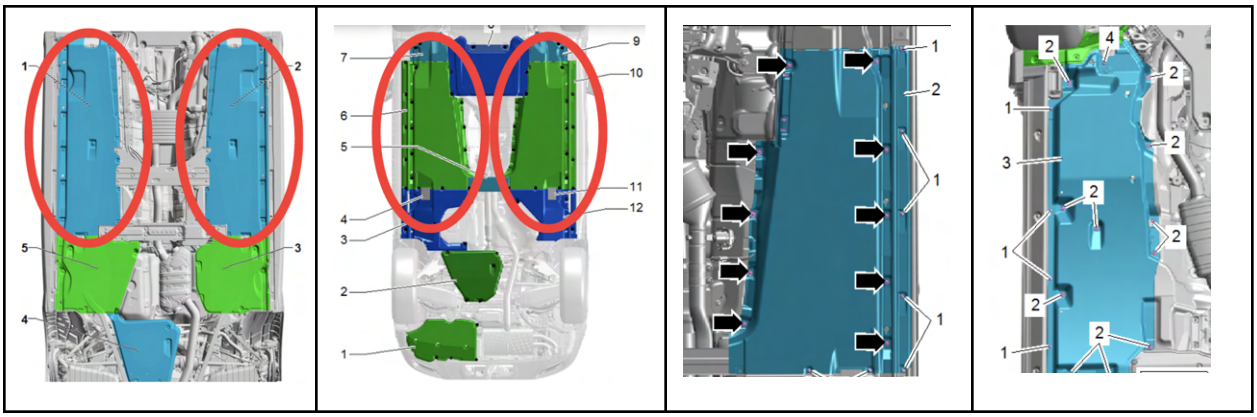

- Plug the Virtual Link harness green connector back into the suspension sensor. Listen for a click and tug to test secureness.
- Ziptie the connectors to each other, up and out of the way.
- Repeat the install with C2 on the other front sensor

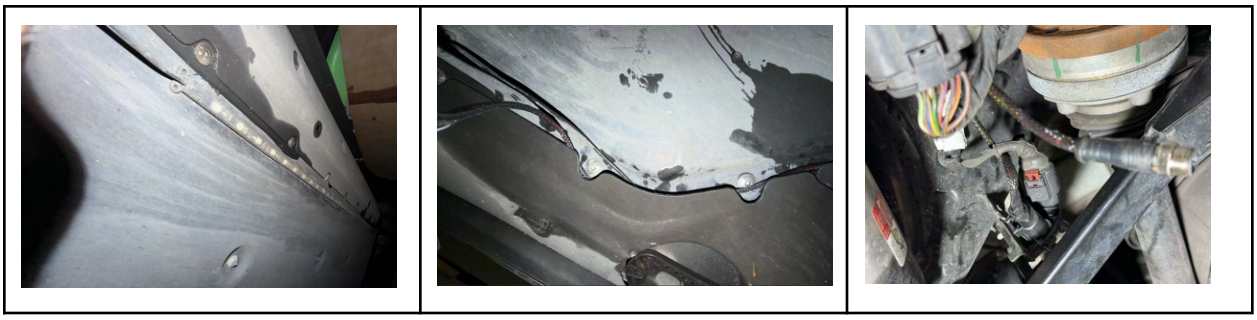


After both front sensors are connected, zip tie the harness to the front crossmember.
Make sure the harness is clear of steering components, suspension arms, sharp edges, and moving parts.

2.5 Route the harness to the rear. A B C D E F G .

Loosen outer side of the center undertray that runs along the transmission tunnel from front to rear.
Route the long tail / free end with the cylindrical connector of the Section 1 harness rearward, tucked above the loosened center undertray toward the rear axle.
Secure the harness as needed so it does not hang below the vehicle or contact the exhaust, driveshaft, axles, suspension components, sharp edges, or undertray fastener points.





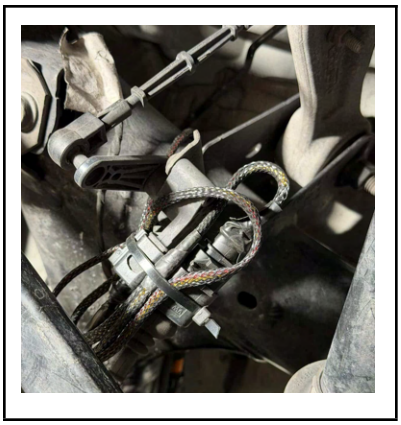
2.6 Install Section 2 at the rear suspension sensors. A B C D E F G .

Locate the two rear suspension sensors. They look identical to the two front suspension sensors though they have black plugs instead of green ones.
Install Section 2 inline at both rear sensor locations.

Routes A B C D E G:
C1 is to be plugged in on the driver side, C2 is to be plugged in on the passenger side.
Route F:
C2 is to be plugged in on the driver side, C1 is to be plugged in on the passenger side.

This is much of a repeat of step 2.4. At each sensor:

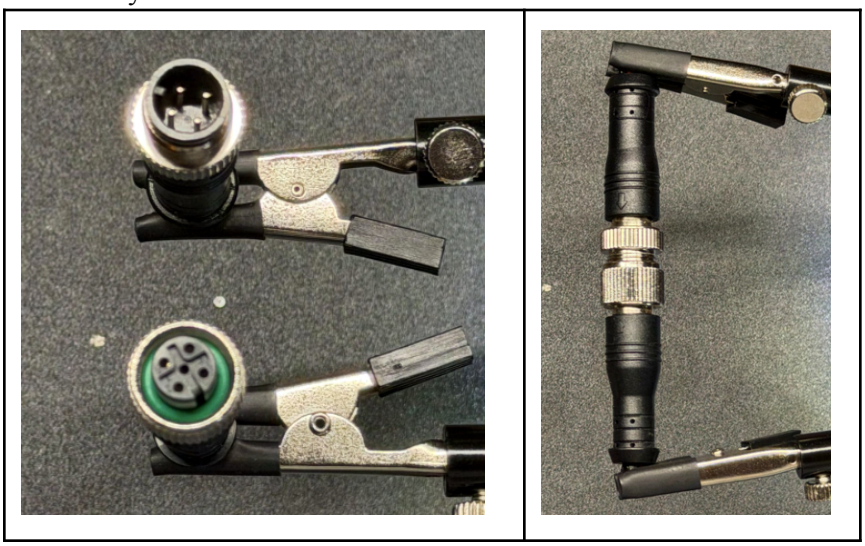
- Start at C1
- For this step, use your included red handled connector tool that we have supplied in the box. Sliding it behind the latch portion at the base of the connector will help in removing each connector.
- Unplug the factory connector from the suspension sensor.
- Plug the factory connector into the matching Virtual Link harness connector. Listen for a click and tug to test secureness.
- Plug the Virtual Link harness back into the suspension sensor. Listen for a click and tug to test secureness.
- Ziptie the connectors to each other, up and out of the way.
- Route the C2 section of the harness above the differential and over to the other side
- Repeat the install with C2 on the other rear sensor



Zip tie the rear harness above the differential and keep it away from axles, suspension links, and exhaust heat.

2.7 Connect and secure sections 1 and 2. A B C D E F G .

Note that sections 1 and 2 share a common 4 pin cylindrical male and female connector. Line up these connectors, press them together and screw them until a tight seal is formed. Be careful as section 2 has multiple cylindrical connectors, do not attempt to plug the 12 pin connector (long harness tail) into the section 1 cylindrical connector.



Secure the cylindrical connection so it is protected from the exhaust, panel screws, sharp edges, driveshaft movement, axle movement, and suspension movement. The connection should be tucked and secured away and should not hang below the underbody panels.

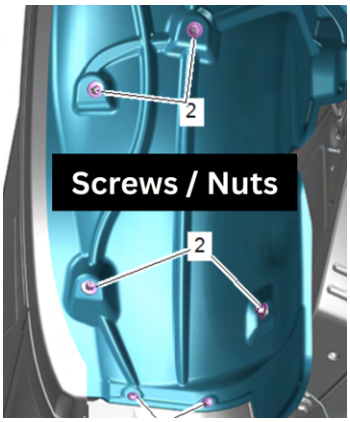
2.8 Route the tail of section 2 toward the rear. A B C D E F G .

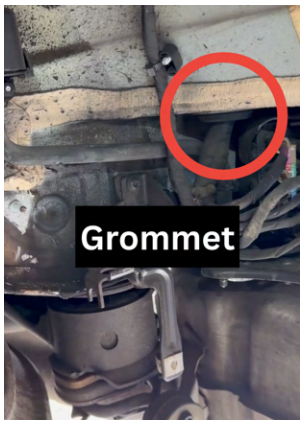
Route the long tail and 12 pin cylindrical connector on Section 2 toward the rear of the car. Leave the harness hanging. In the next sections the harness will enter the vehicle through an existing rubber body grommet.

2.9 Open fender to reach the access point. A E G .

Routes A, E, and G require driver side rear wheel / fender liner access before routing the harness through the rear grommet.

- Remove the driver side rear wheel.
- Remove the driver side rear fender liner by unscrewing the screws / nuts.
- Locate the rear grommet right behind the fender liner in the dead space.

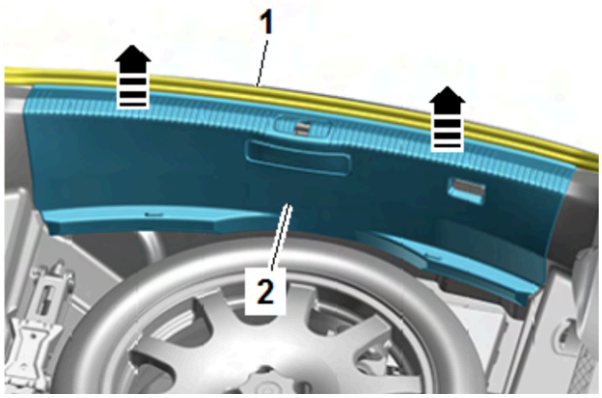




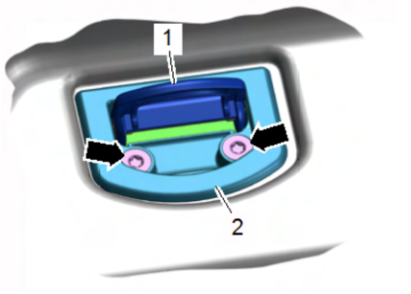
2.10 Open driver side trunk access. A B C D E G .

Open the driver side trunk access area. This makes it easier to receive the harness from inside the vehicle, even if the grommet is not clearly visible from the top side.

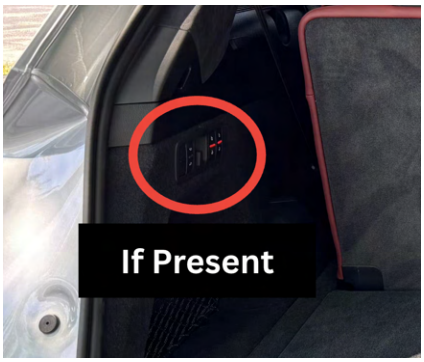
Step 1: Start by removing the rear trim panel. Pull firmly straight up to release it. Be careful of any trunk lighting or wiring connected to this panel. If lighting or wiring is present, disconnect it from the back of the panel before fully removing the panel.



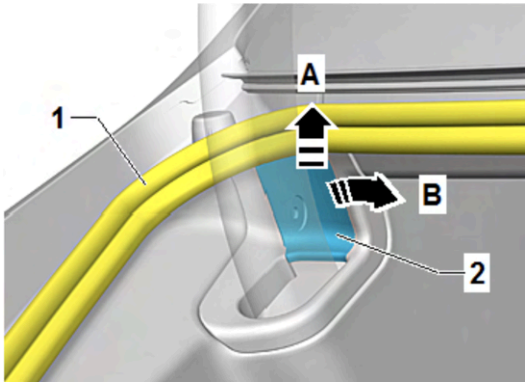
Step 2: Next, remove the trunk eyelet mounting bolts. Using the correct Torx bit, remove the trunk tie-down / eyelet bolts and set them aside safely.



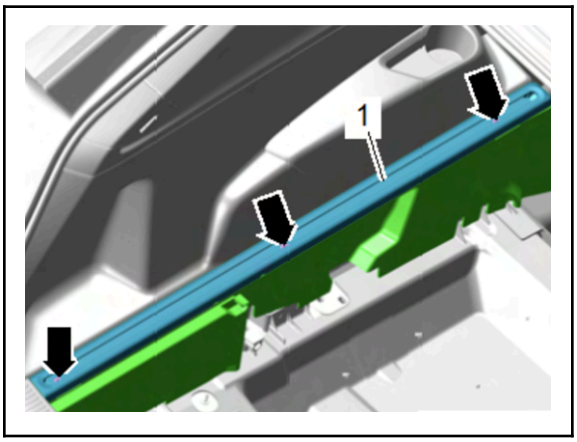
Step 3: If the vehicle has a side button panel, remove it before pulling the side wall. To remove it, pop off the small trim cover at the rear of the button panel to expose the center Torx bolt. Remove the bolt, then carefully pop the button panel out of the side wall. Disconnect the wiring from the back of the panel and set the panel aside.



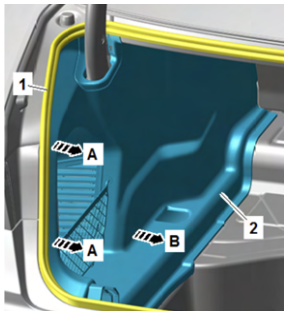
Step 4: If the vehicle has a traditional trunk instead of a hatch, part of the trunk hinge may pass through the side wall. If so, unlock the rear cover for this slot by removing the small rear trim cover with a trim tool, then pull the cover out sideways.

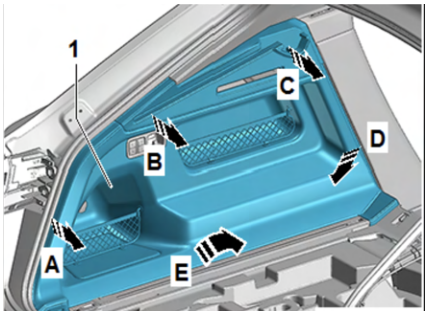


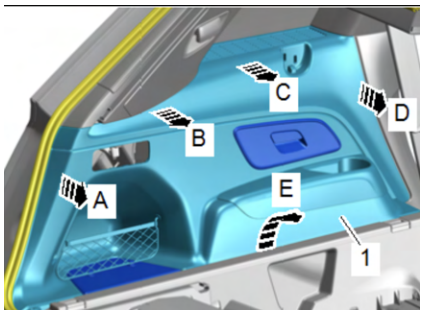
Step 5: If the vehicle has luggage carrier rails, unscrew the driver side rail at these bolt locations and remove the rail.



Step 6: Remove the driver side trunk wall / access panel. Pull the panel perpendicular to the side wall, inward toward the center of the vehicle. Work slowly and be careful not to damage the clips. Be mindful of the rubber seals along the trunk opening as the panel comes out.





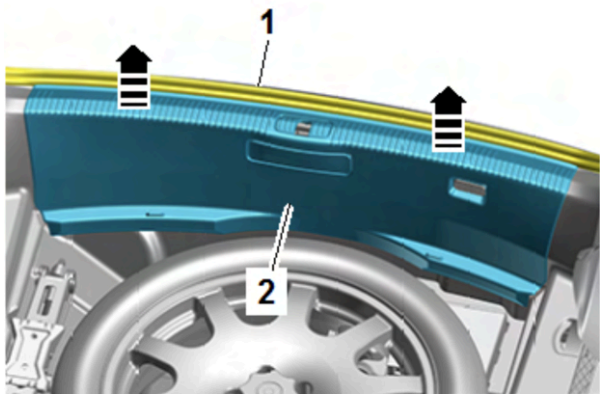


2.11 Open passenger side trunk access. F.

Open the passenger side trunk access area first. This is the side where the harness enters the cabin through the rear grommet.

Step 1: Find the access knob and turn it to release the passenger side access panel. Pull out the panel and unplug the outlet plug from the rear. Set the panel aside.

Step 2: Removing the rear trim panel. Pull firmly straight up to release it. Be careful of any trunk lighting or wiring connected to this panel. If lighting or wiring is present, disconnect it from the back of the panel before fully removing the panel.



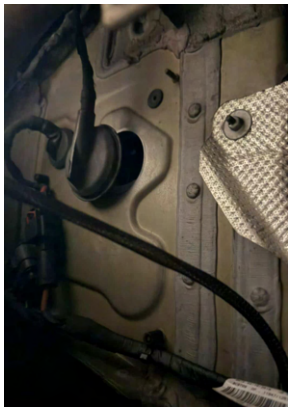
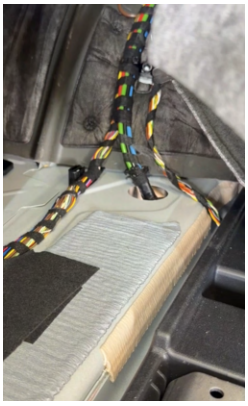
2.12 Route through the rear grommet. A B C D E F G.

Grab the long tail and 12 pin cylindrical connector on Section 2 and route it through the rear grommet:

Routes B C D:
Use the driver side rear grommet above the exhaust.
Route F:
Uses the passenger side rear grommet above the exhaust.
Routes A E G:
Use the fender access opened in Section 2.9.

- We recommend installing heat resistant wire shielding anywhere the harness passes near the exhaust.
- Find your grommet and pull it down and out of the car.
- Make the smallest possible slit in the grommet so the harness can pass through.
- Route the Section 2 tail with the 12 pin cylindrical connector through the small slit in the factory grommet and into the trunk. In some cases you may not see the grommet inside the trunk as it may be blocked by electronics. You will still be able to run the connector into the grommet and fish around for it inside the trunk.



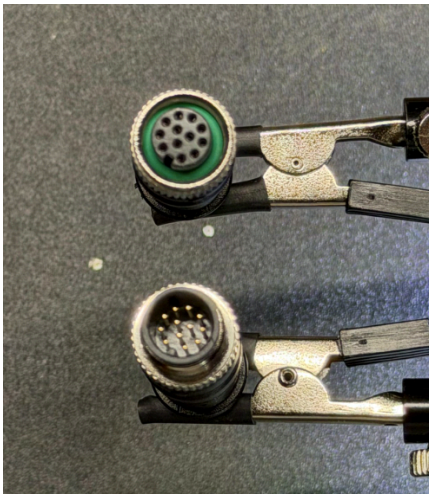



- Secure the remaining loose harness under the car using zip ties. Out of the way of any exhaust, moving parts, or sharp edges.

2.13 Connect Section 2 to Section 3 A B C D E F G.

Locate the Section 2 tail / 12 pin cylindrical connector inside the trunk. Connect the 12 pin cylindrical connections on Section 2 and 3.

- Line up the 12 pin cylindrical connector, screw the connector together until a tight seal is formed.
- Confirm the connection is fully seated and locked.
- Secure the connection so it cannot rattle, hang loose, or get pinched by trim.
- Keep in mind this area close to the grommet on the inside of the vehicle is roughly where the virtual link will live and roughly where the rectangular 18 pin connector will sit.



Do not force the connector. If it does not seat smoothly, check the alignment and confirm you are not attempting to connect the 2 pin and 12 pin connectors before trying again.

2.14 Locate and connect fuse box / power. A B C D E F G .

Locate the fuse box / power connection area for the vehicle.

Routes A E:
The fuse box / power connection is located in front of the spare tire area under the rear floor.
Routes B C D G:
The fuse box / power connection is located in the driver side trunk access area.
Routes F:
The fuse box / power connection is located in the driver side trunk wall behind the panel. Route the long lead of section 3 across the trunk from the passenger side to the driver side.

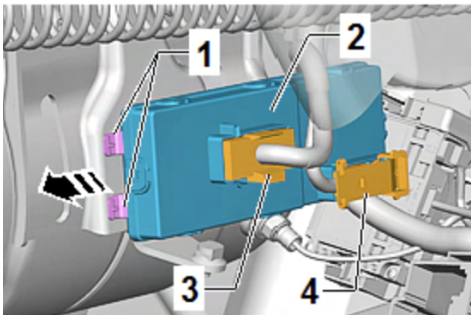
- Route the Section 3 fuse tap power lead cleanly toward the fuse box. Make sure to pass under any panels that located between the grommet area and the fuse box so all cables will remain tucked away when the install is complete.
- Keep wiring away from sharp edges, trim clips, and any area where the trunk floor or side panels may pinch the harness.
- Plug the Section 3 fuse tap into the fuse box in any empty fuse slot in the mini fuse rail.

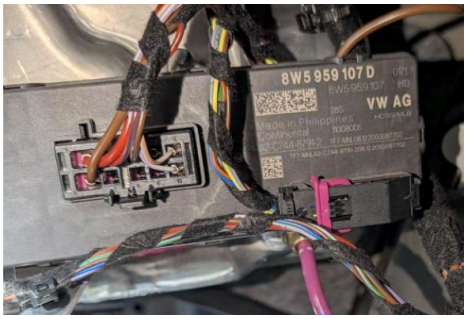
2.15 Locate the factory lift gate module and prepare harness section 4. A B F G .

Locate the factory lift gate module.

Routes A B G:
The factory lift gate module is located in the trunk side access area.
Route F:
The factory lift gate module is located in the driver side trunk wall access panel area across from the passenger side access.

You may need to look around in the area a bit to find the factory lift gate module.



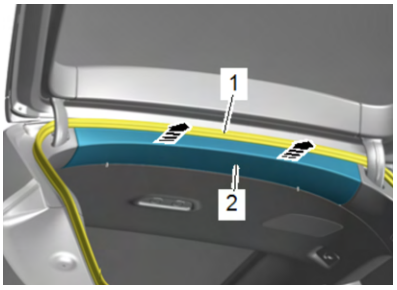


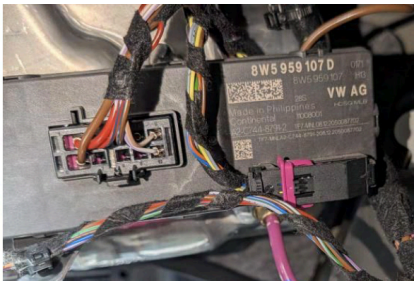
After locating the lift gate module, grab section 4 of the harness and find a clear path from the lift gate module area to the fuse box. In the case of Route F, the path will follow the underside of the trunk trim we removed earlier.

2.16 Locate the factory lift gate module and prepare harness section 4. C E .

Locate the factory lift gate module in the roof line area.

- Remove the back trim panel on the trunk roof line. Pull directly backwards to remove the panel. Find the lift gate module directly under the panel.





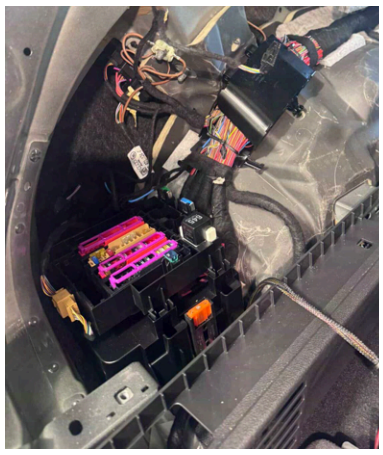
- After locating the lift gate module, grab section 4 of the harness and find a clear path from the lift gate module area to the fuse box with the 32 pin plugs by the roof line.

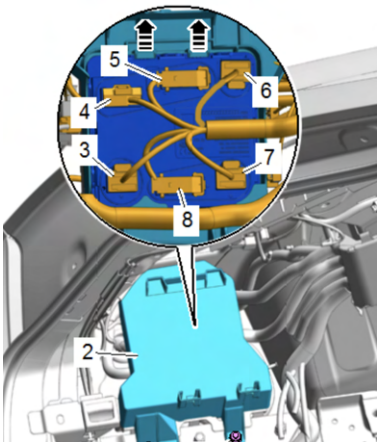
Route C:
Route Section 4 down the **D** pillar.
Route E:
Route Section 4 down the C pillar.

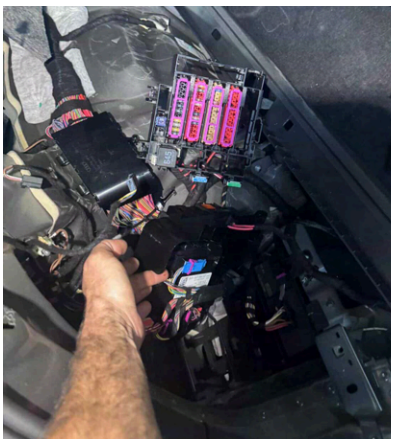
2.17 Locate the factory lift gate module and prepare harness section 4. D .

Locate the factory lift gate module underneath the fuse box / under box pedestal area.

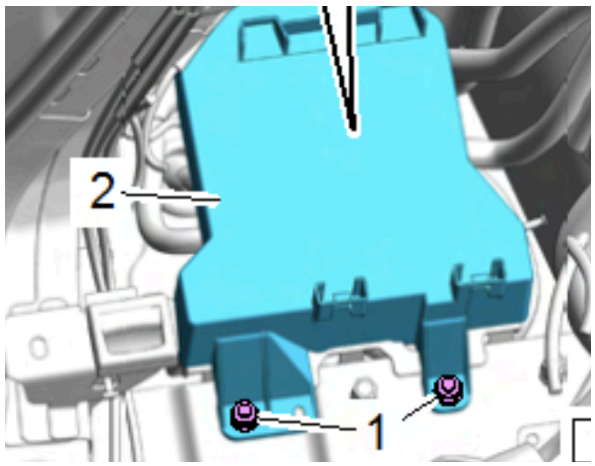
- Remove the fuse box to expose the pedestal under it by carefully unclipping the fusebox and lifting it directly up. Do not unplug any of its connections or any connections under the fuse box.

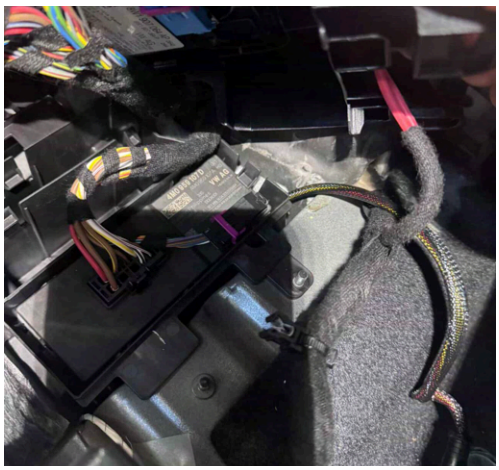






- Remove the under fusebox pedestal by removing the two bolts at the front. Leave the module attached to it connected and do not unplug any of its connections.





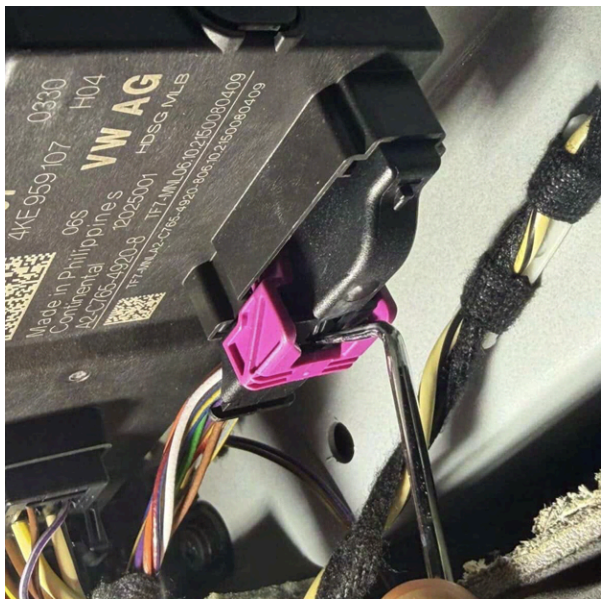
- Locate the factory lift gate module underneath.
- Route harness Section 4 toward the factory lift gate module.

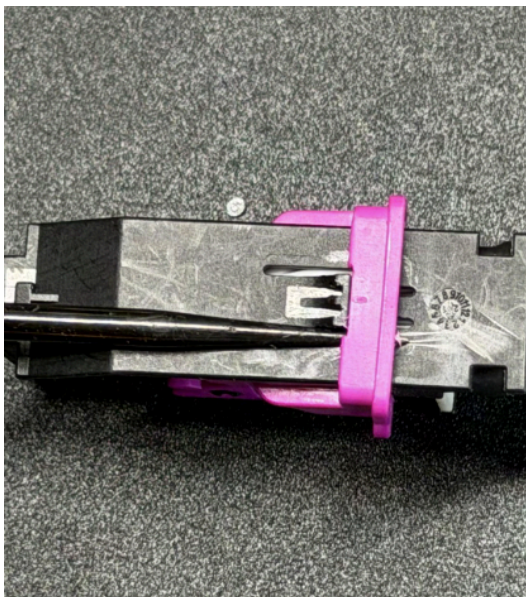
Do not pull on fuse box wiring. Move the fuse box only as much as needed to access the factory lift gate module.

2.18 Connect Section 4 of the harness and install dummy module. A B C D E F G.

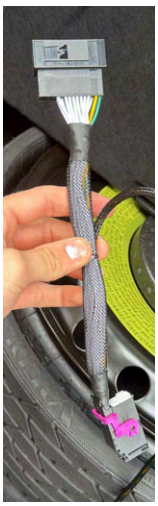
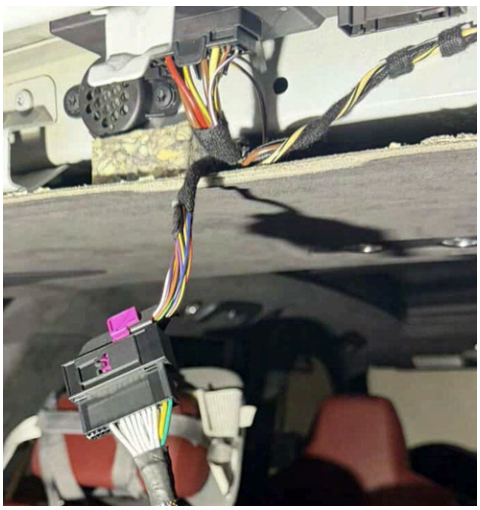
At the factory lift gate module, install the harness Section 4 connectors inline.

- Disconnect the factory harness from the lift gate module by lifting up on the pink tab. You may need a pick or sharp object to assist with this of the retention clip is stubborn.





- Connect the Section 4 male plug into the lift gate module.
- Connect the factory harness female plug into the section 4 female plug

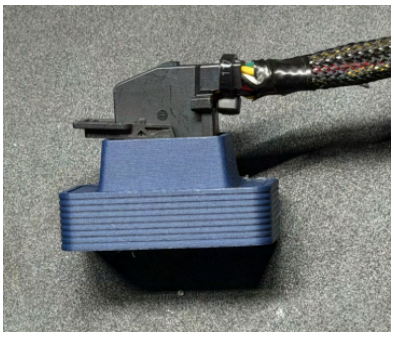
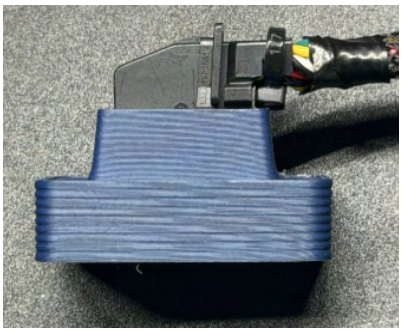




- Confirm both connectors are fully seated and locked.

Do not force the connectors. If a connector does not seat smoothly, check the orientation and alignment before trying again.
After Section 4 is connected, secure the wiring so it cannot pull on the factory lift gate module, rattle behind trim, or get pinched during reassembly.

Next Plug the small dummy module into the final 18 pin module connector on the harness section 3. Do not install the Virtual Link B1 module yet.

- Press down on the spine lock of the black 18 pin connector to lower the locking lever. Press the connector into the dummy module and tilt the connector to lock.

Leave the dummy module and final 18 pin connector in an easy access location, such as near the easy access cubby pocket or in the spare tire area, depending on vehicle layout. We will be coming back to this section after the install is over and we confirm everything works properly with the dummy module in place.

2.19 Final wiring check and close trunk panels. A B C D E F G .

Route D:
Reinstall the fuse box and pedestal.

Before closing the trunk panels, confirm:

- Section 2 is connected to Section 3.
- The fuse tap power connection in Section 3 is fully plugged into the fuse panel
- Section 4 is connected at the factory lift gate module and connected to Section 3.
- The dummy module is connected to the final 18 pin connector on Section 3.
- The grommet is sealed around the harness section 2.
- No wiring is routed across sharp edges or trim clip locations.
- No wiring will be pinched by trunk panels, side panels, fuse box parts, C pillar trim, D pillar trim, or upper trunk trim.

Reinstall all of the trunk panels in reverse order of removal. Make sure the dummy module and final 18 pin connector remain easy to access after the trunk is closed up.

2.20 Button up under the car. A B C D E F G .

Before buttoning up the underbody panelling, inspect the full underbody harness route, confirm:

- Front sensor connectors are fully seated.
- Rear sensor connectors are fully seated.
- The Section 1 to Section 2 cylindrical connector is tight and secured.
- The Section 2 tail is routed safely into the rear grommet.
- The harness is not touching exhaust, axles, driveshaft, suspension arms, sharp edges, or panel screws.

Reinstall all underbody parts that were removed or loosened in prior steps:

- Tighten the center undertray.
- Reinstall the front underbody panel.
- Reinstall the rear fender liner if removed.
- Reinstall the rear wheel if removed.

Confirm:

- No part of the harness hangs below the underbody panels.

2.21 Lower the car and reconnect the battery. A B C D E F G .

- Lower the vehicle.
- Reconnect the battery
- Cycle the ignition 3 times
- Turn off Tire Change Mode / Jack Mode.

Confirm:

- The vehicle powers up normally.
- There are no suspension warnings that stay on.
- The vehicle raises and lowers normally using the factory suspension controls.

Do not drive the vehicle normally until Tire Change Mode / Jack Mode has been turned off and the suspension has stabilized.

If a warning appears and does not clear, turn the vehicle off and recheck the sensor connectors, Section 1 to Section 2 connection, Section 2 to Section 3 connection, fuse box / power connection, Section 4 lift gate module connections, and dummy module connection.

After confirming the vehicle powers up normally, we recommend driving the vehicle at least 15 miles and at least 30 minutes before swapping over the dummy module with virtual link.

During this check period:

- Watch for suspension warnings.
- Listen for rattles or rubbing.

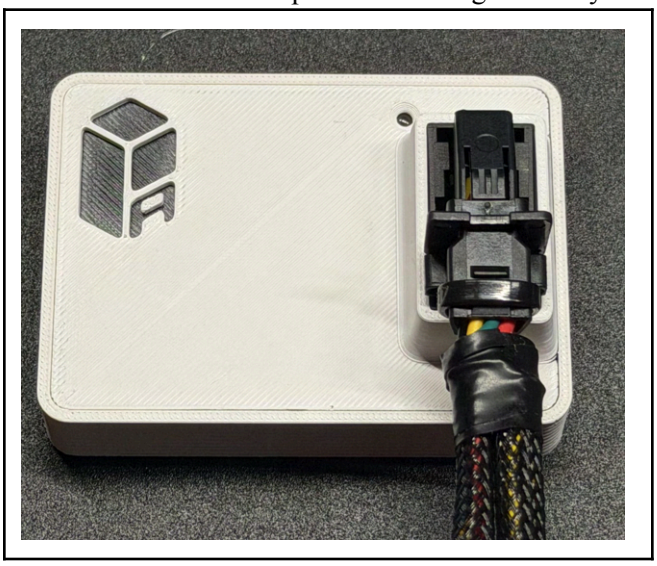
2.22 Install Virtual Link B1 module and continue final setup. A B C D E F G .

If everything looks normal after 15 miles / 30 minutes of driving, remove the dummy module from the final 18 pin connector.

- With the car off (the 12V battery does not need to be disconnected for this module swap) remove the dummy module from section 3.
- Plug the Virtual Link B1 module into the final 18 pin connector on section 3.
- Confirm the Virtual Link B1 module is fully seated.
- Turn the car on and cycle the ignition 3 times
- Turn off Tire Change Mode / Jack Mode if it is turned on.

Confirm:

- The vehicle powers up normally.
- There are no suspension warnings that stay on.



2.23 Move onto the app guide. A B C D E F G .

You have now finished the installation. If there are no issues, continue on to the app guide pdf for instructions on how to use the app.

3. Troubleshooting & Next Steps

If, after final installation, the vehicle does not behave normally, do not drive it. This includes new warning lights that stay on the dash, ride height looking wrong, or suspension not responding normally,
Turn the vehicle off and check the following:

- All front suspension sensor connectors are fully seated and locked.
- All rear suspension sensor connectors are fully seated and locked.
- Section 1 and 2 connection is fully seated, locked, and secured under the vehicle.
- Section 2 and 3 connection is fully seated, locked, and properly routed into the vehicle.
- Section 3 and 4 connection is fully sealed and locked and secured in the car.

- The black Section 4 connectors are fully seated and locked on the tailgate module.
- The fuse tap connection on Section 3 is connected fully to the fuse box.
- The Virtual Link B1 module is connected to Section 3.
- The harness is not pinched, pulled tight, rubbing on sharp edges, or touching exhaust components.

If the vehicle still does not behave normally, turn the vehicle off, disconnect the 12V battery, wait 10–15 minutes, and recheck all connectors. Reconnect the battery, cycle the ignition, and check again.
If anything still does not look right, contact Pinnatec Auto Support at:
https://pinnatecauto.com/support/
Include the vehicle model/year, a short description of the issue, any warnings or lights on the dash. If everything looks normal and there are no new warnings that stay on, continue with the Virtual Link B1 app guide.

