

ECS TUNING

Installation Instructions - ECS Tuning Vent Pod Vacuum/Boost Gauge Kit



Part Number **ES2593247**
(also available as
steering wheel mounted kit **ES2593248**)
for **VW MKV GTI TSI**
(2008.5+)

This tutorial is provided as a courtesy by ECS Tuning.

Proper service and repair procedures are vital to the safe, reliable operation of all motor vehicles as well as the personal safety of those performing the repairs. Standard safety procedures and precautions (including use of safety goggles and proper tools and equipment) should be followed at all times to eliminate the possibility of personal injury or improper service which could damage the vehicle or compromise its safety.

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ECS Tuning Vent Pod Vacuum/Boost Gauge Kit
for VW MKV GTI (TSI)

ES2593247



VW MKV GTI (TSI) Vent Pod Vacuum/Boost Gauge Installation

Kit Contents:

- Vacuum/boost gauge
- Gauge power supply wiring harness
- Extension harness
- Vacuum/boost sensor (transducer with integral harness)
- Gauge vent pod
- Rigid plastic hose
- Braided rubber hose
- ECS Boost Tap
- Crimp bullet-style electrical connectors
- Crimp butt-style electrical connectors
- Zip ties

Tools

- Non-marring trim removal tool
- Electric drill with 1/2-inch drill bit
- Wire stripper/crimp tool
- T20 Torx driver
- Work light
- 5mm Allen Wrench
- Electrical tape



Overview - How the tutorial is organized

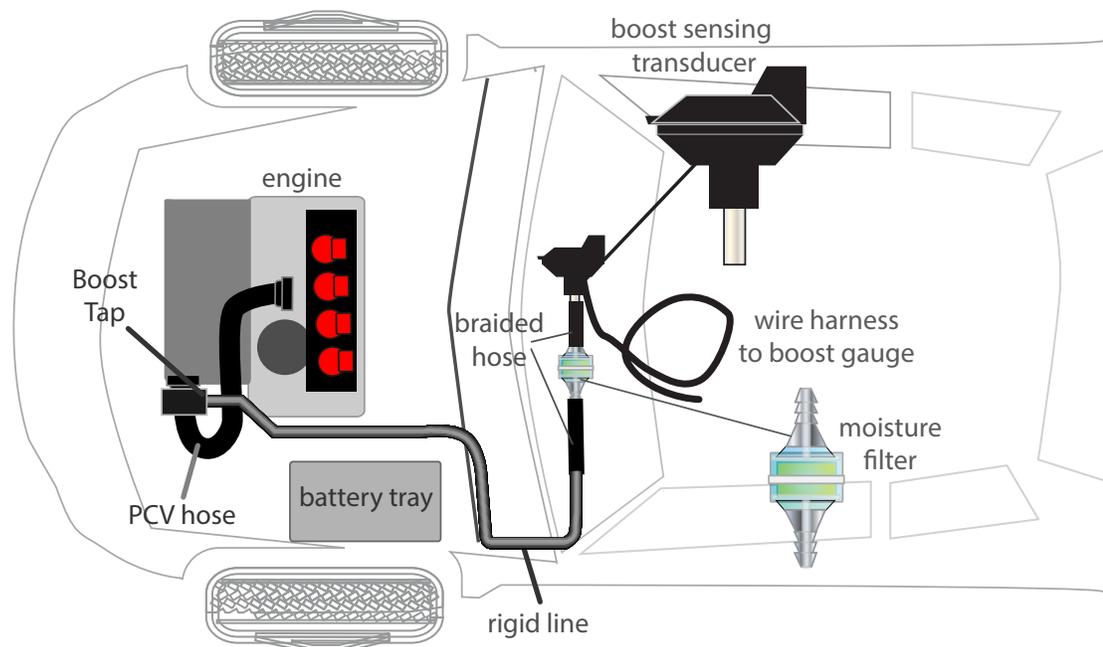
VW MKV GTI (TSI)

This tutorial is broken into three sections:

- 1) Run the Vacuum Line** - Shows how to connect the vacuum sensing line between the port on the PCV breather hose and the vacuum/boost transducer inside the cabin.
- 2) Install the Vent Pod and Gauge** - Shows how to disassemble the dashboard vents and install the vent pod and vacuum/boost gauge.
- 3) Make Electrical Connections** - Shows how to splice the gauge power cable to the headlight wiring harness.

Section 1 - Run the vacuum line to the transducer

This schematic shows kit component general locations and connections. Engine vacuum/boost is sampled at a port on the new ECS Boost Tap supplied in the kit. The small sensing hose connected to the Boost Tap is then routed through the engine compartment to a grommet in the firewall, where it enters the cabin.



Inside the cabin, the plastic vacuum line from the engine is connected to the vacuum/boost transducer. A moisture filter is installed between the vacuum source and transducer. The transducer wiring harness is routed to the gauge later.

Please route and secure all hoses, harnesses, and the transducer itself, to avoid interference with moving parts like the steering shaft and pedals.

Section 1 - Run the vacuum line

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Step 1 - Remove the beauty cover

Install fender covers.

Remove the engine beauty cover, which is held in place by plastic posts in rubber grommets.

Pull straight up to free the posts from the grommets. Lay the cover aside.



Step 2 - Disconnect PCV hose

Disconnect the PCV hose at the intake manifold by squeezing the retainer tabs together and pulling the hose off of the intake manifold.



Step 3 - Assemble Tap

Apply Loctite to the pipe plug. Install the pipe plug into the upper hole as shown, using the 3mm allen wrench.

Tighten the plug just until snug, do not over tighten it.



Section 1 - Run the vacuum line

VW MKV GTI (TSI)

Step 4 - Install Nipple

Apply Loctite onto the nipple threads.

Install the nipple into the lower hole. Tighten the nipple just until snug, do not over tighten it

NOTE: You may need to use pliers to tighten the nipple. When doing so, be sure to protect the nipple with tape or a wrap so as not to damage it.



Step 5 - Install Boost Tap

Install the Boost Tap into the intake manifold by pushing it onto the intake manifold until it is completely seated.

NOTE: Be sure the Boost Tap is completely seated; you could otherwise break the retainer clip during installation.



Step 6 - Install Vacuum Hose

Carefully push the retainer clip into place.

Note the position of the Boost Tap. The nipple should angle slightly downward, as shown in the photo.

This will ensure that the vacuum hose, once attached, can be routed accurately while removing the nipple from a vulnerable position.



Section 1 - Run the vacuum line

Step 7 - Run the rigid plastic line

Run the rigid plastic line from the cabin to the engine compartment. There is a grommet in the far left side of the firewall behind the battery that makes a good access point (near arrow).

To access the grommet, we need to remove the battery.



Special Caution - Battery Safety

There are several things to consider before you disconnect and remove the battery:

- 1) Use extreme caution when working around any battery.** Wear full wrap-around safety glasses, approved for shop use. Wear gloves and protective clothing. Battery acid is highly caustic. Do not allow it come in contact with exposed skin, hair, or your eyes.
- 2) Battery gases are explosive.** Never introduce a spark or open flame near the battery. Hydrogen gas is highly flammable, and batteries have exploded under the right circumstances.
- 3) Disconnecting the battery will erase keep-alive-memory data** stored in the vehicle electronic control unit, car radio, and any module that stores user presets, adaptive strategies, or user preferences. Make sure you have your anti-theft radio code handy, and that you know how to use it. Store any radio station presets so you can reprogram the radio later. Do not disconnect the battery immediately before a scan tool emissions test, or you will not pass.

If you are uncomfortable with these safety issues, please seek the assistance of a qualified automotive service professional.

Step 8 - Remove the battery

Remove the battery top and side covers.

Remove the positive and negative battery cables, and battery hold down bracket, then lift the battery from the battery tray.



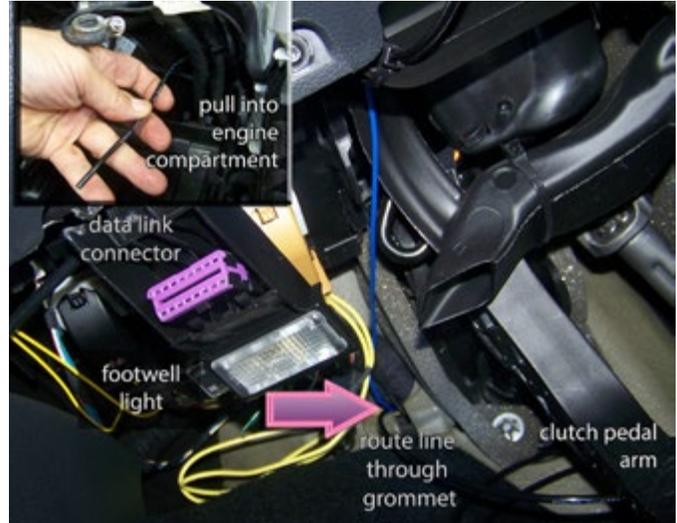
Section 1 - Run the vacuum line

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Step 9 - Run plastic line

Inside the car: Remove the underdash panel from below the steering column. Working beneath the dash, run the plastic vacuum line through the firewall grommet (arrow).

Inside the engine compartment: Pull the plastic line through the grommet.



Step 10 - Route the line to the vacuum port

Route the plastic line to the front of the engine, next to the fuel lines. Run it up to the braided hose at the vacuum port and connect the two hoses.

Tie wrap the plastic line to the fuel hose.

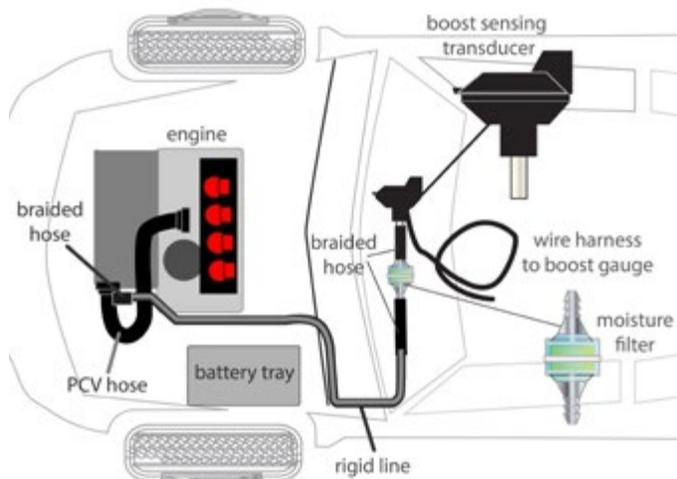


Step 11 - Connect the transducer

Inside the car, use short lengths of braided rubber hose to connect the plastic vacuum line, moisture filter, and vacuum transducer in series.

Mount the transducer in a safe location beneath the dash, and tie wrap it in place. Tie wrap the vacuum lines as well, keeping them clear of any moving parts like the steering column and pedals.

Now we are ready to install the vent pod and gauge.



Section 2 - Install the Vent Pod and Gauge

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Step 1 - Disassemble the center dash

Using a non-marring trim removal tool, pry the center top grille from the dash. Pry carefully at several points until the grille panel pops free.



Step 2 - Remove plate

Lift and remove the stamped metal plate beneath the grille.



Step 3 - Remove screws

Using a T20 Torx driver, remove the three screws beneath the plate.



Section 2 - Install the Vent Pod and Gauge

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Step 4 - Remove the center vent housing

Lift up at the front of the dash center vent assembly. If necessary, use a flat-tipped non-marring trim removal tool to pry upward in the gap between the top of the radio and panel, releasing the tabs (arrows).



Step 5 - Remove the center vent housing

Lift the entire assembly out of the dash far enough to remove the emergency flasher switch and disconnect the electrical connector from the seat belt indicator light.



Step 6 - Remove the radio trim surround

Using the trim removal tool, pry around the edges of the trim panel surrounding the radio. Pop it free and remove it.



Section 2 - Install the Vent Pod and Gauge

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Step 7 - Remove the radio

Remove the four Torx screws holding the radio in place. Then slide the radio forward and rest it on the gear shift lever; do not disconnect the antenna or any radio wiring.



Step 8 - Prepare the power cable

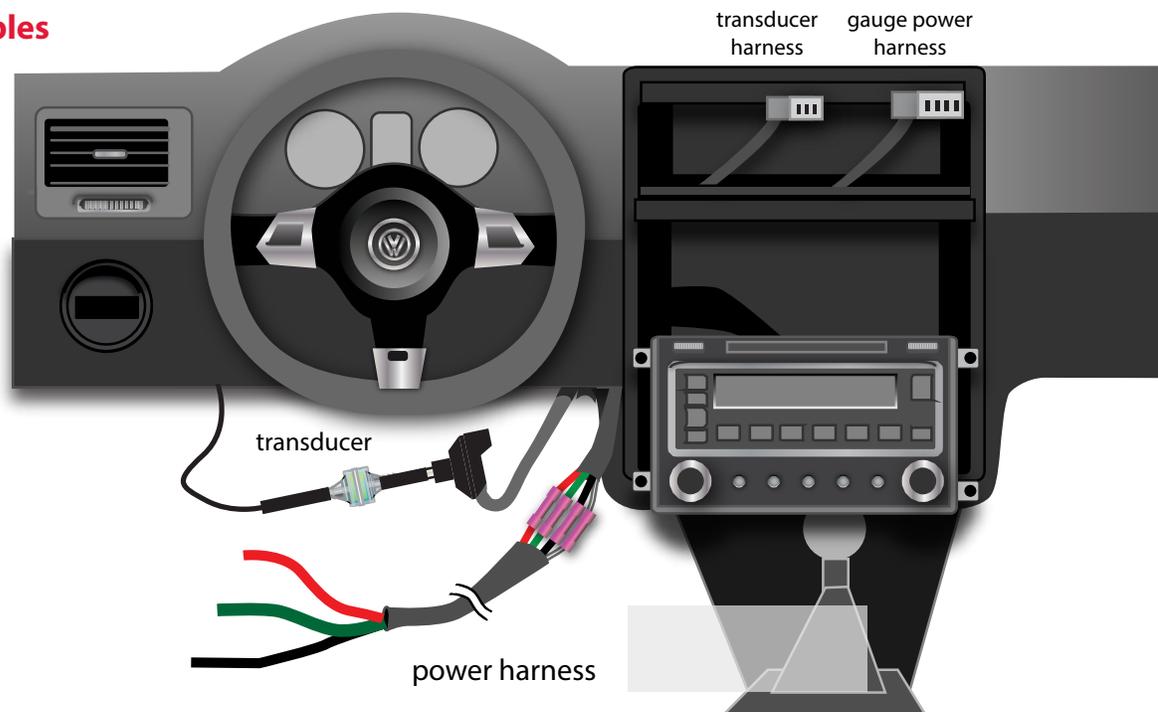
Splice the extension cable to the four-wire power cable. We prefer soldering these connections and insulating them with heat shrinkable tubing. If you do not have access to a soldering iron, your kit includes four crimp-style butt connectors (see page 14 of this pdf for a detailed explanation of these connectors).



Step 9 - Route the cables

Route the transducer cable and power cable from the underdash area, up through the left side of the center console to the center dash opening.

Pull the cables through far enough to reach the area where the gauge will be installed in the vent pod.



Section 2 - Install the Vent Pod and Gauge

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Step 10 - Remove the vent trim

Remove the front trim surround from the center vent housing.

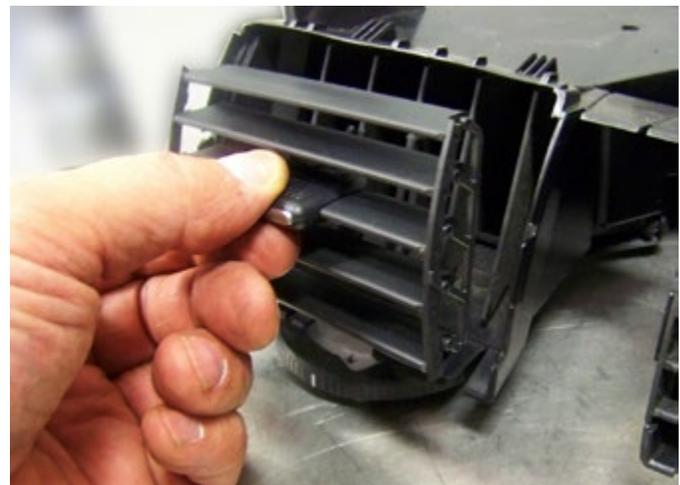
Using a small screwdriver or similar tool, work your way around the perimeter, prying on the snap-lock tabs holding the sections together.

Lift off the front trim.



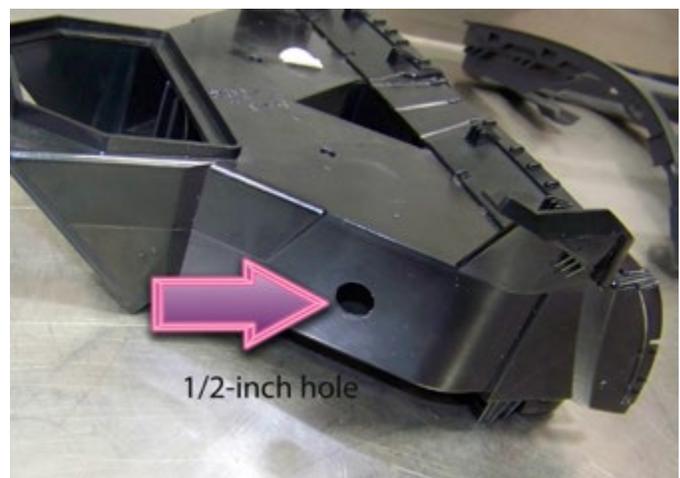
Step 11 - Remove the old vent louvers

Pull/pry the vertical and horizontal vent louvers from the left side vent opening.



Step 12 - Drill the harness hole

Drill a 1/2-inch hole for the wiring harnesses, at the location shown.



Section 2 - Install the Vent Pod and Gauge

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Step 13 - Install the vent pod

Snap the new vent pod into the vent opening.



Step 14 - Install the vent pod

Reinstall the trim face on the vent assembly. Align the cover with the housing, then push them together evenly until all plastic perimeter snap-clips are engaged.



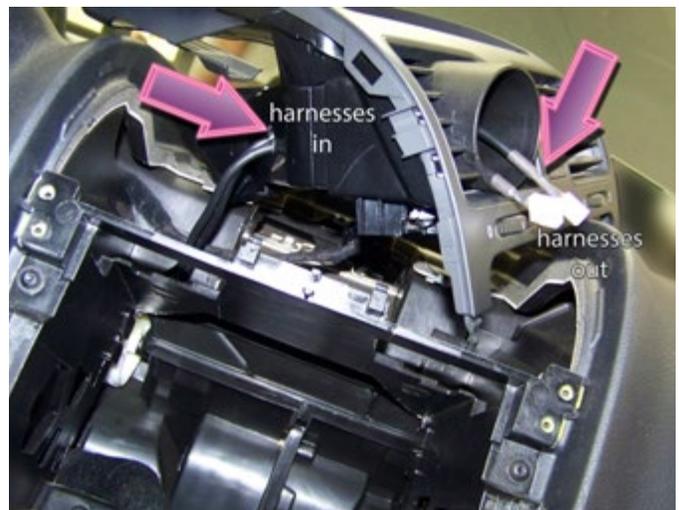
Step 15 - Route harnesses

Route the two harnesses through the ½-inch hole, into the vent housing, until they exit through the round hole in the vent pod.

Reinstall the emergency flasher switch and reconnect the air bag light.

Slide the radio back into the dash and screw it in place. Reinstall the radio trim surround.

Reinstall the vent assembly with pod in the top of the dash.



Section 2 - Install the Vent Pod and Gauge

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Step 16 - Install the gauge

Remove the rubber band from the kit and stretch it over the gauge, as shown.

Lightly lube the exterior of the band with grease or petroleum jelly.



Step 17 - Install the gauge

- Plug the harnesses into the gauge.
- Plug the 3-wire transducer harness into the center receptacle.
- Plug the 4-wire power harness into either of the outer receptacles.
- Push the gauge into the pod until it sits flush. Remember to lightly lube



Step 18 - Install the gauge

- Replace the Torx screws remove back in Step 6.
- Reinstall the plate and top grille removed earlier.

Now it's time to make the wiring connections and test our gauge.



Section 3 - Make Electrical Connections

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Step 1 - Remove and unplug the headlight switch

With the headlight switch in the off position, push in on the center knob and rotate it clockwise until it stops. Then pull straight out to remove the switch from the dash.

Unplug the switch from its wire harness electrical connector and lay it aside.



Step 2 - Remove the fuse panel cover

Using a non-marring trim removal tool, pry the at the front edge of the fuse panel cover on the left side of the dash.

Remove the panel.



Step 3 - Route the harnesses to the fuse panel opening

Push the disconnected headlight harness back through the dashboard to the opening in the side of the dash.

Route the power harness to the same opening in the dash, and make your splices.

See general splicing tips and vehicle schematic on the next two pages.



Section 3 - Make Electrical Connections

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Your kit contains both bullet style and butt connectors. Use the bullet connectors to splice the gauge power harness into the light switch harness. Use the butt connectors to connect the extension wire to the power harness. Directions below show how to use the connectors.

Using crimp connectors

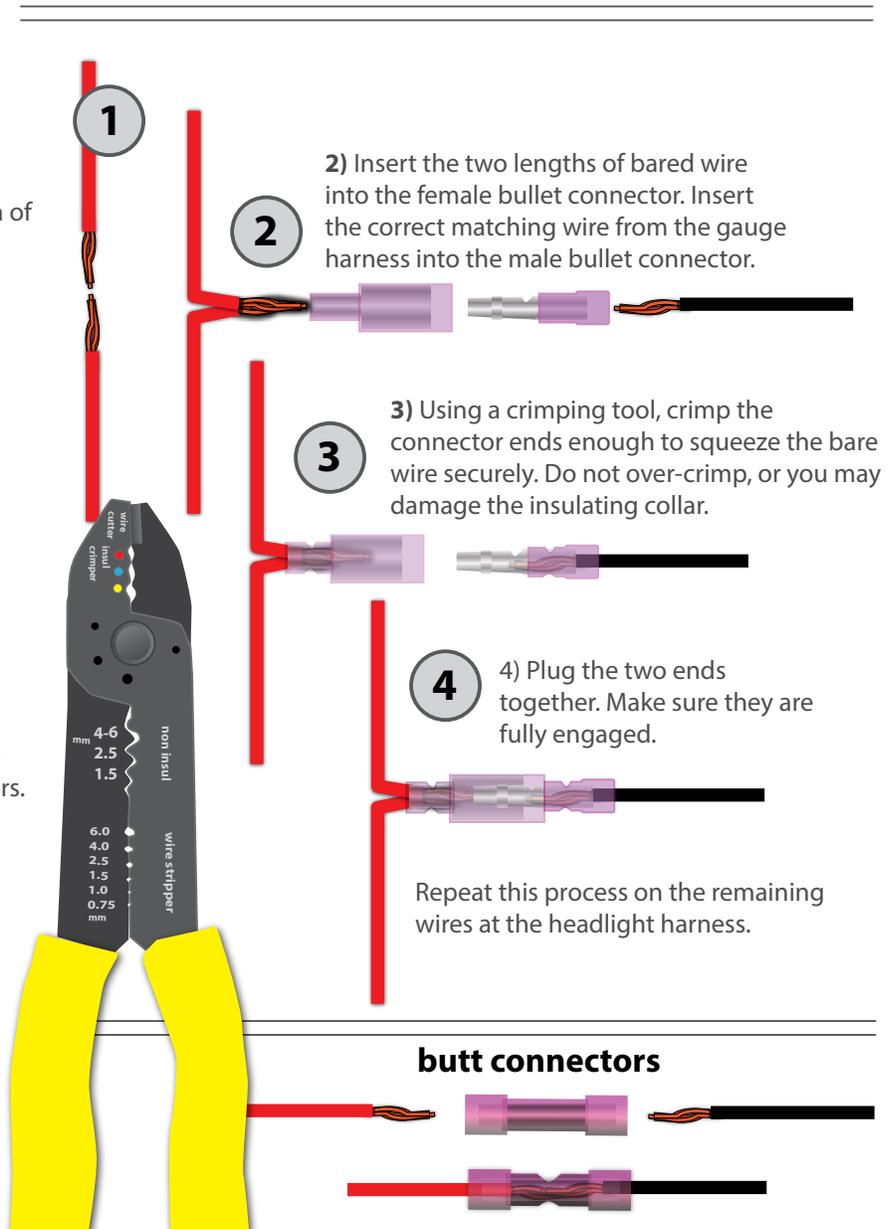
1) Cut the headlight harness wire you want to tap into.

Remove enough insulation from both lengths of wire to expose a short length of wire (about 3/8-inch).

Note:

Use a suitable wire stripper that will remove the insulation without cutting away wire strands.

Use a crimping tool of the correct size, not side cutters or other pliers that may damage the insulation on the connectors.

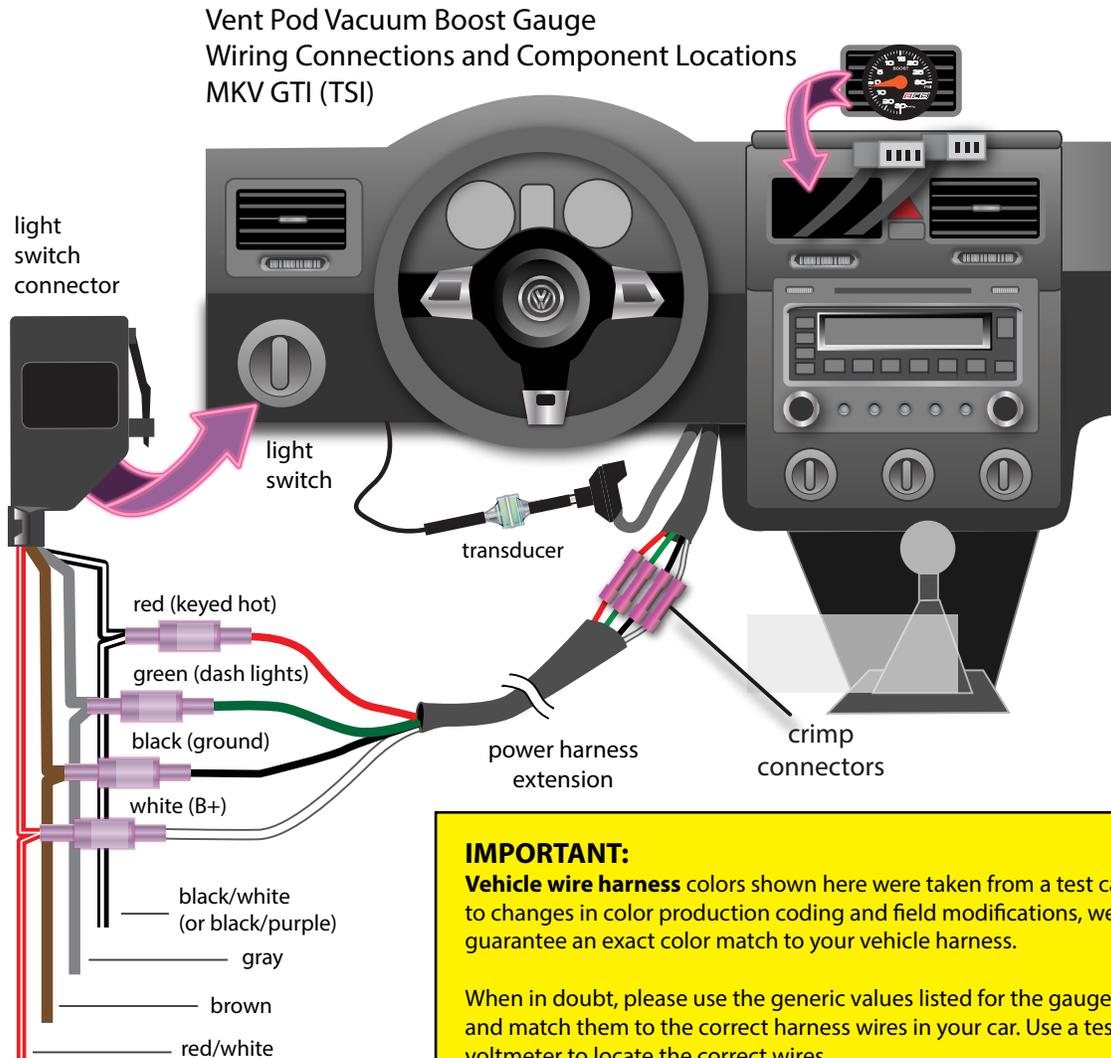


Use the same methods to splice the gauge power harness to the extension harness using butt connectors.

See page 15 for a schematic showing component locations, electrical connections, and wire colors.

Section 3 - Make Electrical Connections

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IMPORTANT:

Vehicle wire harness colors shown here were taken from a test car. Due to changes in color production coding and field modifications, we cannot guarantee an exact color match to your vehicle harness.

When in doubt, please use the generic values listed for the gauge harness, and match them to the correct harness wires in your car. Use a test light or voltmeter to locate the correct wires.

- red = keyed hot
- green = dash lights
- black = ground
- white = battery hot (B+)

Finishing Up

Splice the power and headlight harnesses using the bullet connectors in the kit.

- Reinstall and reconnect the battery, battery hold down, and covers.
- Test the gauge. When you switch the ignition on, your vacuum/boost gauge should go through an initialization process: it will sweep from full vacuum to full boost, and then settle back to zero before your engine starts.
- Your gauge backlight should illuminate and respond to changes in your dash light dimmer settings.

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Finishing up

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Testing and Reassembly:

When you are sure the gauge is working properly, replace the fuse cover, lower and underdash panels, and headlight switch. Slide the headlight switch into the dash until it snaps in place.

Thanks!

Thank you for purchasing the ECS Tuning Vent Pod Vacuum/Boost Gauge.

We appreciate your business, and hope this installation guide has been helpful.

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ECS Tuning also sells a steering column mounted gauge set, visible through the steering wheel [ES2593248](#)