



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



Part Number **ES8020**
for Audi B6 A4
(2002-2004)

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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 Audi B6 A4 1.8T (2002-2004)

ES8020



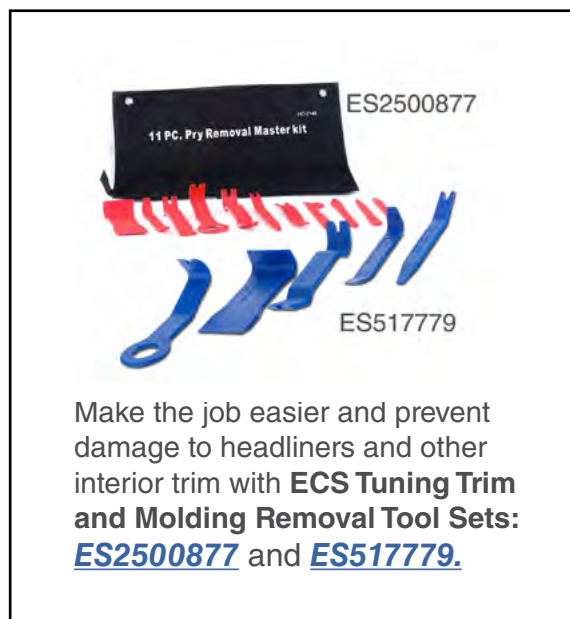
VW MKVI Golf/GTI Vent Pod Vacuum/Boost Gauge Installation

Kit Contents:

- vacuum/boost gauge with o-ring
- gauge power harness
- vacuum/boost sensor (transducer with integral harness)
- gauge vent pod
- vacuum tee
- moisture filter
- rigid plastic vacuum line
- rubber hose
- bullet connectors
- crimp clamps
- zip ties

Tools

- crimping tool (end nippers)
- side cutters (diagonal cutters)
- non-marring trim removal tool
- electric drill with 1/2-inch drill bit
- ratchet with 8mm socket and short extension
- wire stripper/crimper
- common screwdriver
- X-ACTO® knife (or similar)
- work light
- sharp hole punch



The gauge in your kit is used for several applications. The box it comes in contains parts not used in this application (and not shown above), including a u-shaped mounting bracket, brass threaded attachment studs, two screws, a plastic vacuum tee, and insulated spade connectors. (Throw them in your tool box for another project.)

Electrical Connections

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

Using crimp connectors

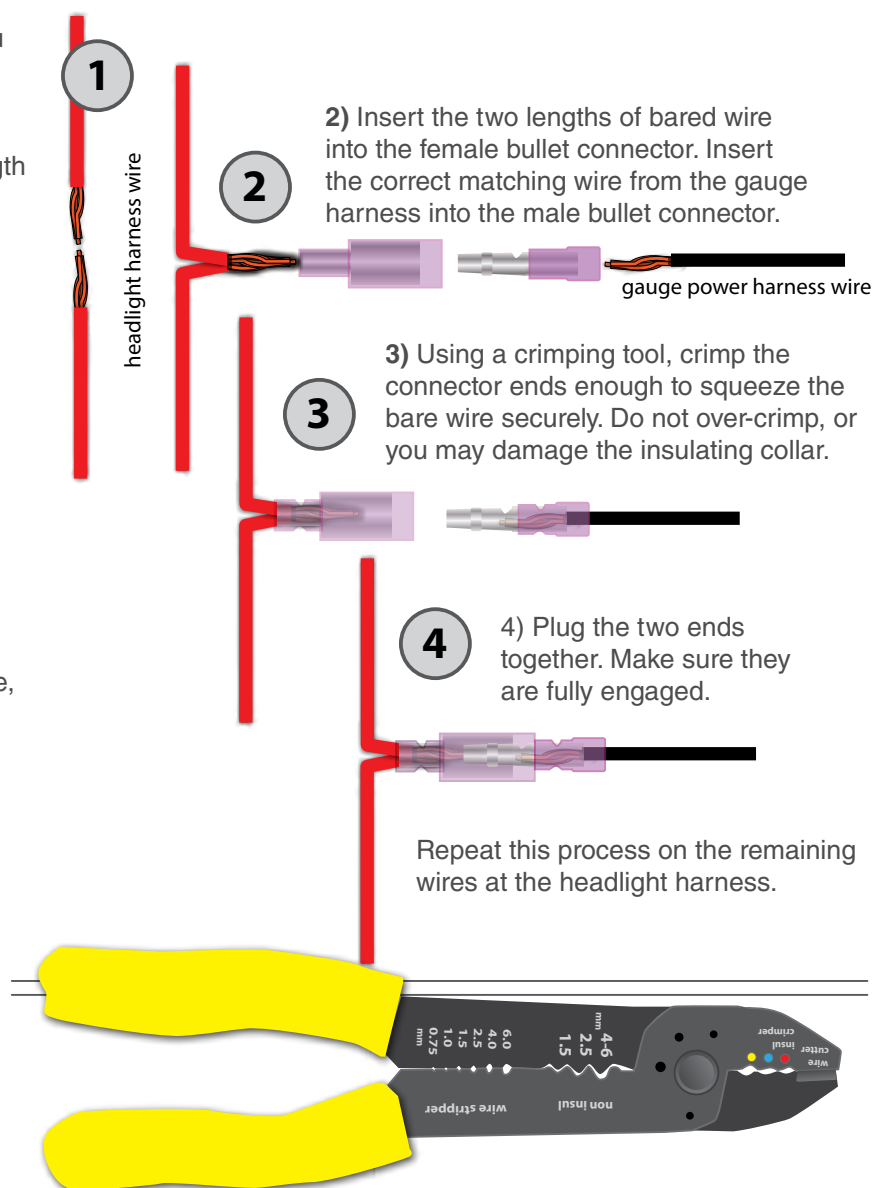
1) Cut the headlight harness wire you want to tap into.

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.



Repeat this process on the remaining wires at the headlight harness.

See **page 9** for a schematic showing component locations, electrical connections, and wire colors.

Overview - How the tutorial is organized

This tutorial is broken into two sections:

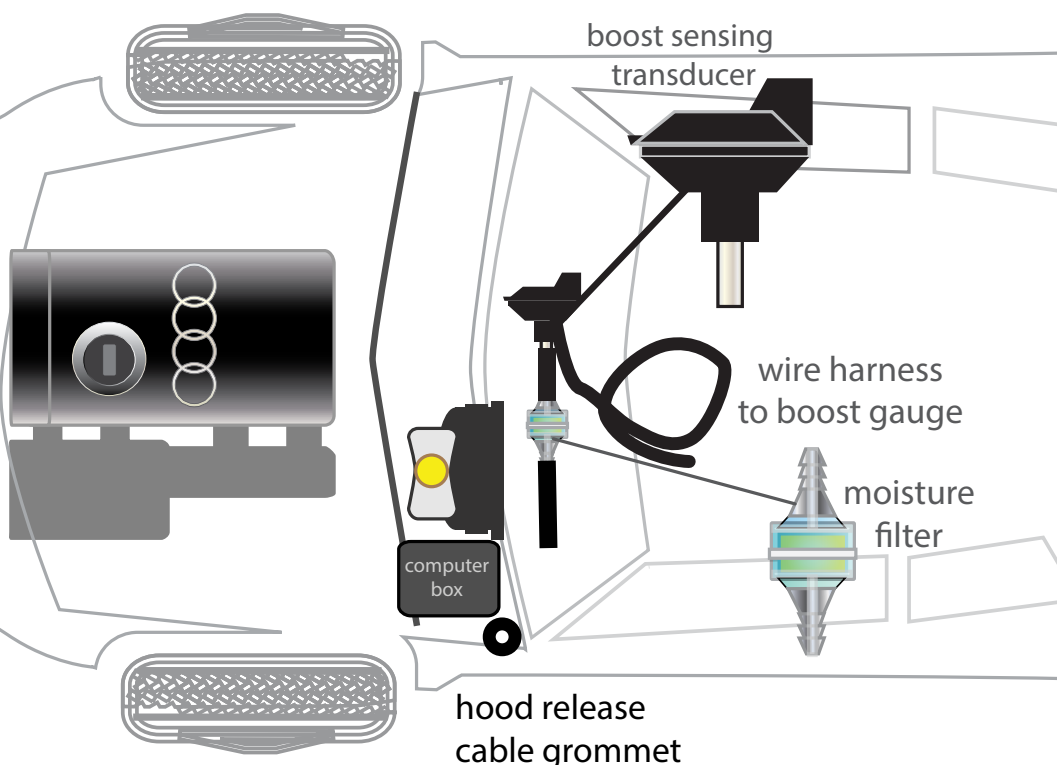
- 1) **Run the Vacuum Line** - This section describes how to connect the vacuum tee at the intake manifold, and how to route the plastic vacuum line from the tee to the vacuum transducer inside the cabin.
- 2) **Install the Vent Pod and Gauge** - This section shows how to disassemble the dashboard vents, install the vent pod and vacuum/boost gauge, and splice the wiring.

Section 1 - Run the vacuum line to the transducer

In this section we will connect the vacuum/boost sensing line to a vacuum source at the intake manifold, and then run the line through the firewall, into the cabin area beneath the dash. Use the schematic below to identify major component locations and hose routing.

The photos on the following pages show how to:

- Insert the **vacuum tee** in the vacuum line at the intake manifold.
- Connect the tee to the long length of **plastic line** using a short length of **braided vacuum hose**.
- Route the plastic vacuum line from the engine compartment to the **grommet** in the firewall.
- Route the **plastic vacuum line** through the firewall grommet into the cabin, below the dashboard.
- Connect the **moisture filter** and vacuum/boost pressure **transducer** to the plastic vacuum line, using short lengths of braided vacuum hose.



The vacuum tee, plastic line, clamps, and braided rubber hose are all included in your kit. Use the zip ties to secure all lines and hoses safely away from moving components, like pedals and the steering mechanism.

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Section 1 - Run the Vacuum Line - Install the Transducer

Step 1 - Under the hood- Install the vacuum tee.

Open the hood.

Locate the vacuum line located at the left rear of the intake manifold. (For reference, the hose is close to the coolant recovery bottle.)

Cut the hose, as shown.

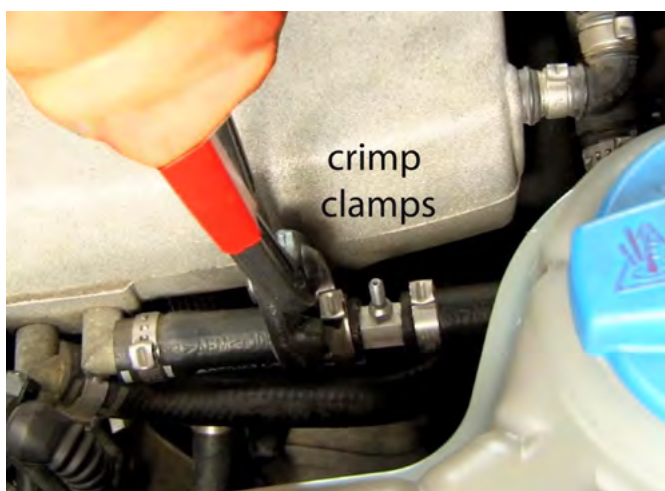


Step 2 - Under the hood- Install the vacuum tee.

Slide one crimp clamp over each length of hose and insert the vacuum tee between the hoses.

When the tee is properly positioned, use the end nippers to crimp the clamps tight.

(We prefer placing the small vacuum nipple in the tee at 12 o'clock to allow any moisture in the hose to drain back to the manifold, making it less apt to freeze in cold weather.)



Step 3 - Under the hood- Remove the rain tray

Pull the rubber weatherstrip from the front of the plastic rain tray cover. Then pull the rain tray up slightly and straight forward to remove it.



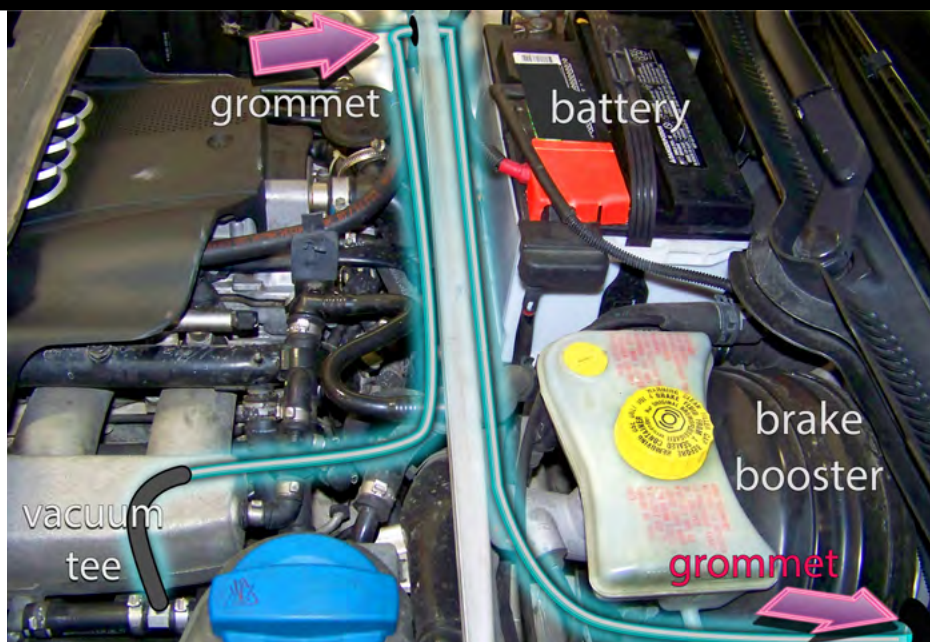
Section 1 - Run the Vacuum Line - Install the Transducer

Step 4 - Under the hood- Route the plastic line

Attach a short length of braided rubber hose to the vacuum tee nipple (tight fit, so push hard!).

Run the semi-rigid plastic vacuum line from the braided hose, across the front of the water tray to the rubber grommet located to the right of the battery. Push the line through the grommet.

Then route the line back across the tray, in front of the battery, to the rubber firewall grommet located next to the brake booster.



Use the zip ties in the kit to secure the plastic line at several locations. Leave a slight bend in the rubber braided hose at the vacuum tee to compensate for engine movement and vibration.

Step 5 - Under the hood- Punch a hole in the firewall grommet

Punch a small hole in the rubber grommet in the firewall (arrow), located between the brake vacuum booster and ECM.



Section 1 - Run the Vacuum Line - Install the Transducer

Step 6 - Under the hood- Push line through grommet

Push the plastic vacuum line through the small hole in the rubber grommet, into the cabin.

Now it's time to move inside the cabin.



Step 7 - Under the dash - Remove fuse panel cover

Remove the underdash panel.

Open the driver side door and pry off the fuse panel cover to expose the side dash panel attachment bolt (arrow).

Use an 8mm socket and ratchet to remove the bolt.



Step 8 - Under the dash - Drop underdash panel

Remove the two additional bolts from the underdash panel using the same 8mm socket and ratchet.

Drop the panel down and unclip the purple data link connector and footwell lamp. No need to unplug them; just unclip both from the underdash panel and let them hang.

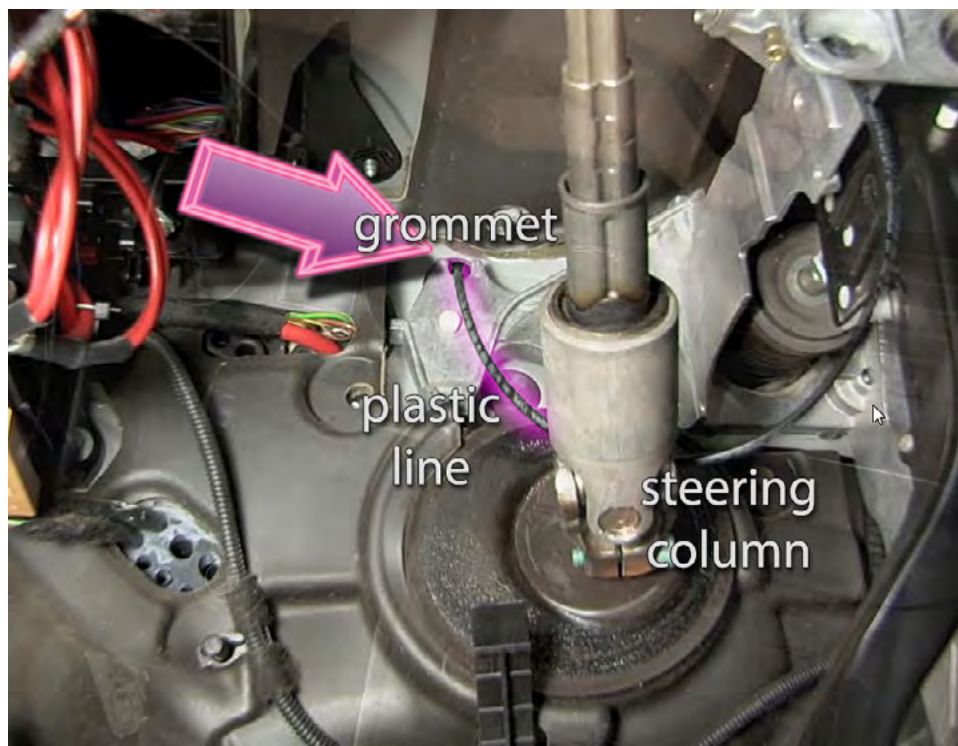


Section 1 - Run the Vacuum Line - Install the Transducer

Step 9 - Under the dash - Pull plastic line into cabin

Reach up under the dash and pull the plastic vacuum line through the firewall grommet.

Route the line toward the center console.

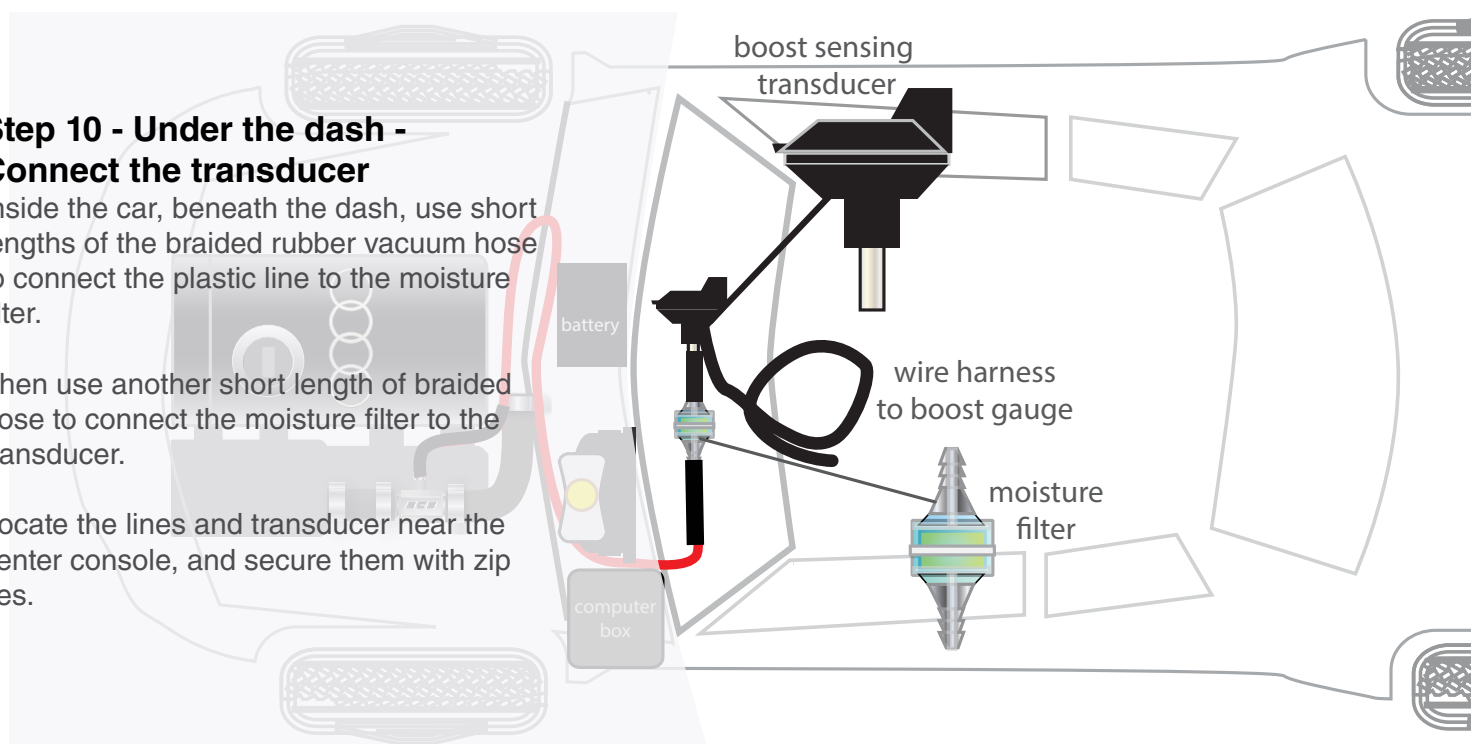


Step 10 - Under the dash - Connect the transducer

Inside the car, beneath the dash, use short lengths of the braided rubber vacuum hose to connect the plastic line to the moisture filter.

Then use another short length of braided hose to connect the moisture filter to the transducer.

Locate the lines and transducer near the center console, and secure them with zip ties.



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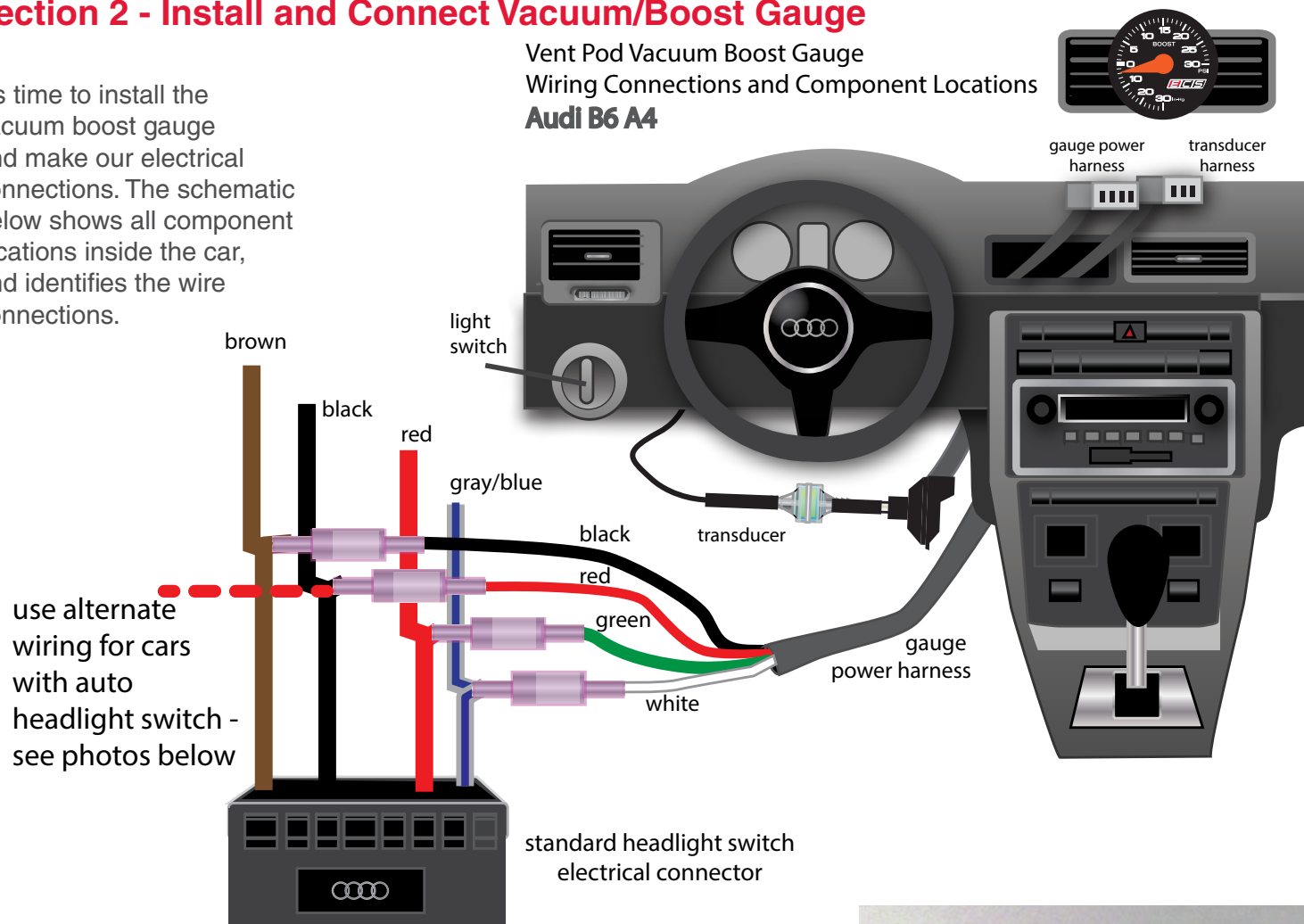
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Section 2 - Install and Connect Vacuum/Boost Gauge

It's time to install the vacuum boost gauge and make our electrical connections. The schematic below shows all component locations inside the car, and identifies the wire connections.

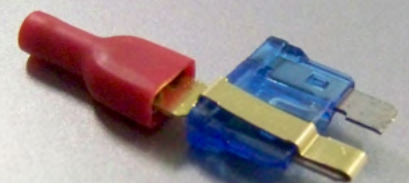
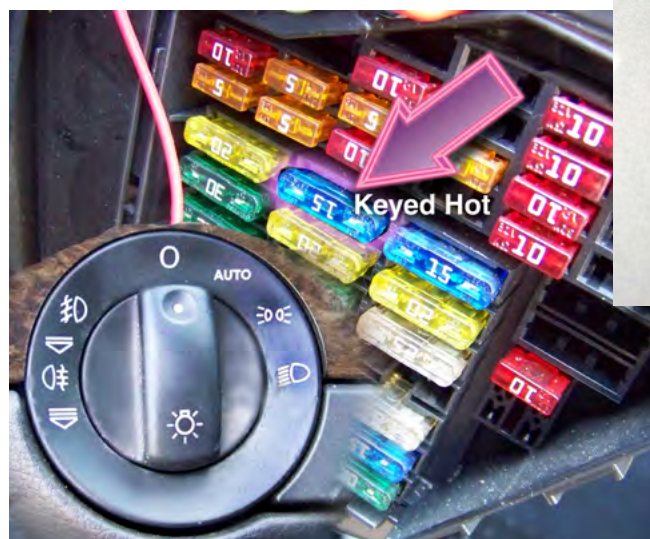
Vent Pod Vacuum Boost Gauge
Wiring Connections and Component Locations
Audi B6 A4



Special Note for Cars equipped with Auto Headlight Switch

If your car has an Auto Headlight Switch, there is no keyed hot terminal (black wire) at the headlight harness connector. You'll need to pick up keyed voltage at the fuse box.

To do so, install the fuse tap in your kit on the 15 amp fuse indicated in our photo.



Attach the fuse tap to the fuse as shown and reinsert the fuse.

Connect the red wire from the gauge harness to the fuse tap using the insulated terminal in the kit.

Section 2 - Install and Connect Vacuum/Boost Gauge

Step 1 - Remove the dash vents

Using a non-marring trim removal tool, pry the center vent assembly from the dash. Work your way around the perimeter to compress the spring clips as you pull the vent straight out.



Step 2 - Remove the vertical vents

Pull the vent from the dash; flip it over and unplug the electrical connector.



Step 3 - Remove the Vent Cover

Use a small common screwdriver to pry the tabs on the vent cover. Pry them loose one at a time until the cover pops off.



Section 2 - Install and Connect Vacuum/Boost Gauge

Step 4 - Remove the louvers

Pull the horizontal and vertical vent louvers from the left hand vent housing.



Step 5 - Cut a notch in the vent flap

Turn the assembly over. Use your X-ACTO knife to cut a square notch in the air control vent flap in the area highlighted in the photo.



Step 6 - Drill a hole in the vent body

Flip the vent housing over; drill a 1/2-inch hole in the location shown.



Section 2 - Install and Connect Vacuum/Boost Gauge

Step 7 - Pull the cables to the vent opening in the dash

Route the gauge power cable and the transducer cable up through the left underdash area to the vent opening in the dash.



Step 8 - Plug in the gauge

Hold the vent housing up close to the vent opening and feed the two cables through the ½-inch hole drilled earlier.

Pull both cables through the vent housing opening (arrows).



Step 9 - Install the vent pod

Hold the vent pod up to the opening. Feed the two cables through the round gauge hole, and let them hang.



Section 2 - Install and Connect Vacuum/Boost Gauge

Step 10 - Install the vent pod

Insert one side of the vent pod into the vent hole.
Align the small pins with the slots in the housing.

Pivot the vent inward as you align the pins on with
the slots in the opposite side opening.



Step 11 - Install the vent pod

With pins and slots aligned, press the vent inward
until it snaps in place.



Step 12 - Plug in the vent pod

Lift up the vent housing and plug in the electrical
connector removed back in step 2 of this section.



Section 2 - Install and Connect Vacuum/Boost Gauge

Step 13 - Plug in the vent pod

Position the front trim bezel over the vent assembly, and press it inward until it snaps in place.

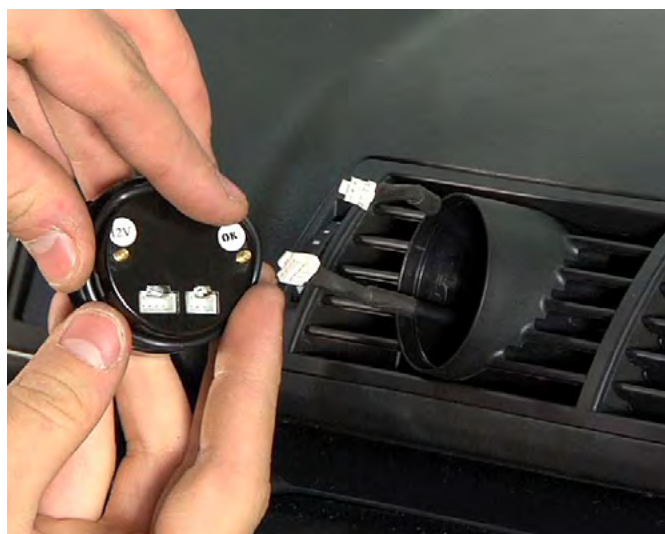
Then press the complete assembly into the dash opening until it snaps in place.



Step 14 - Connect the gauge

Slide the o-ring in the kit over the gauge body, as shown.

Plug in both electrical connectors.



Step 15 - Install the gauge

Align the gauge with the hole in the vent pod.

Push in until the o-ring is no longer visible, and the gauge sits flat.

This is a tight fit. You may want to apply a small amount of light lubrication to the o-ring to make it slide in more easily.



Section 2 - Install and Connect Vacuum/Boost Gauge

Step 16 - Run the power wire

Lower the steering wheel. Route the power wire from the over the top of the steering column toward the headlight switch.



Step 17 - Remove the light switch

To remove the light switch from the dash, start with the light switch in the OFF position.

Then push inward on the center knob and rotate it to the right until it stops.

Pull straight out to remove the switch from the dash.



Step 18 - Remove the light switch

Push the release tabs on the side of the housing and pull the electrical connector from the back of the switch.



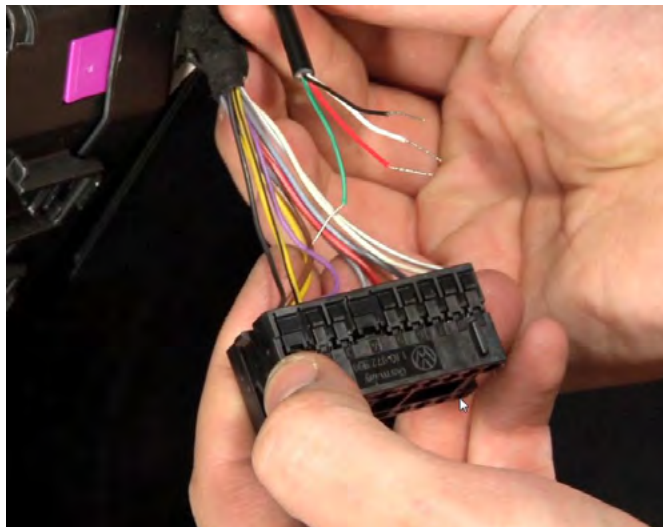
Section 2 - Install and Connect Vacuum/Boost Gauge

Step 19 - Push the connector below the dash

Push the electrical connector back through the headlight switch hole, and pull it out beneath the dash where you have more room to work.

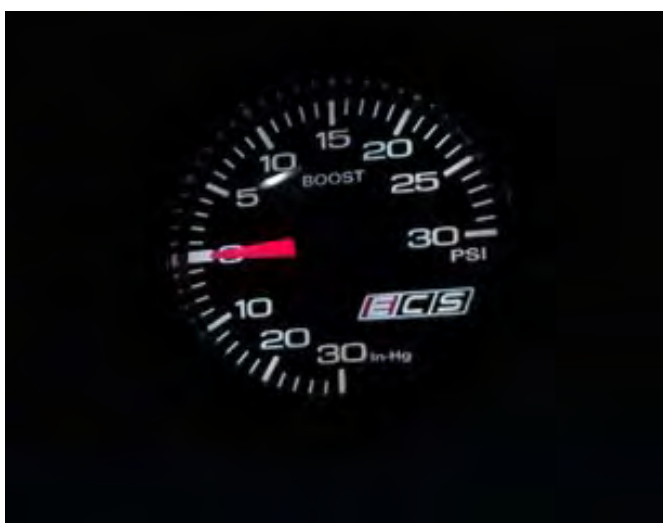
Using the directions on page 9, splice in all four wires from the gauge power harness to the correct wires at the headlight switch harness (or use the fuse tap for the red wire).

Route the harness connector back through the switch hole in the dash. Reconnect the headlight switch and let it hang.



Step 20 - Reinstall the light switch

When wiring is complete, test gauge function and illumination. Key-on, the gauge dial should sweep to both extremes before settling back at zero.



Step 21 - Reinstall the light switch

With gauge operation verified, slide the light switch straight into the dash opening until it clicks in place.



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Finishing up

Time to finish up:

When you are sure the gauge is working properly, replace the underdash panel and fuse panel dash cover.



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.