

DISCLAIMER

By installing this custom boost gauge, you agree to assume all responsibility for any damage to your vehicle, other vehicles or persons as the result of installing the gauge.

The designer assumes no responsibility for modifications performed on your vehicle. These instructions are believed to be accurate for Volkswagen MKIV 2000-2005 model cars, however some differences may exist between what is depicted in the instructions and your car. Use a multimeter to confirm wiring if in doubt. Do not attempt to install this gauge if you are not familiar with electrical systems. Failure to follow these instructions carefully may result in damage to your car. If your car is under manufacturer's warranty, this installation may void that warranty.

WARRANTY

This gauge has a limited 90-day warranty effective upon the receipt of the gauge. The warranty does NOT include damage to the gauge as a result of incorrect installation or physical damage. Any warranty returns must first be authorized by the designer before returning the gauge for replacement.

Before starting the installation, read these instructions in their entirety.

Boost Gauge Installation Guide

This gauge fits inside the cluster of VW MKIV platform 2000-2005 cars. If installing into an automatic, the gear selector indicator will be covered up by the gauge.

This gauge does NOT fit into clusters of New Beetles.

Disconnect the battery positive terminal before starting the installation.

Required Tools

#10, #15 Torx Screw Drivers
Flat screw Driver
X-Acto knife
Heat gun or Hair dryer

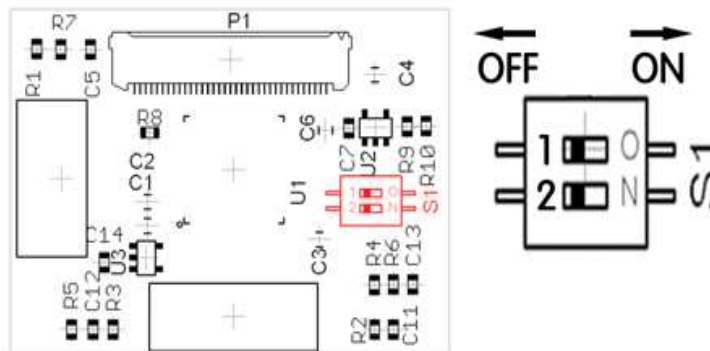
Required Time

Approximately 2 hours.

Gauge Contents

Gauge Screen
Wire Harness
Interface PCB
Interface PCB Protection Foam
2 Tap Connectors
Foil Tape

S1 DIP Switch Configuration Settings



Switch	OFF	ON
1	Stock 2.5 bar MAP sensor (VW 038 906 051)	3.0 bar MAP sensor (VW 038 906 051C)
2	°F EGT Units †	°C EGT Units †

† Applies only to gauge with EGT option. The EGT probe must be a type-K thermocouple. Both grounded and ungrounded probes are compatible, however a grounded probe is recommended for faster response.

Electrical Specifications

Input Voltage:	12-18 VDC
Current:	20 mA
Power:	0.35 Watts
Protection:	150mA PTC auto-resetting fuse

Installation Instructions

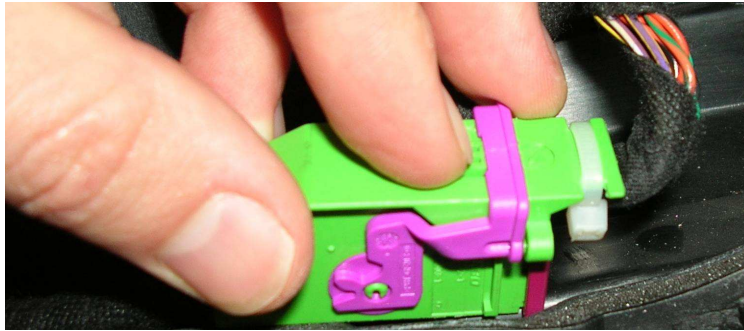
WIRING CONNECTIONS

FUNCTION	GAUGE	CAR	LOCATION
Power	Red	75x Relay Post	Driver side foot rest
Ground	Black	Ground Post	Driver side foot rest
MAP	Green	black/yellow	Near intercooler
Dimmer	Yellow	white/blue	Dimmer switch

- Position steering wheel as far toward you as possible. Remove trim under cluster by pulling up on fabric, then pull straight back on the plastic piece.



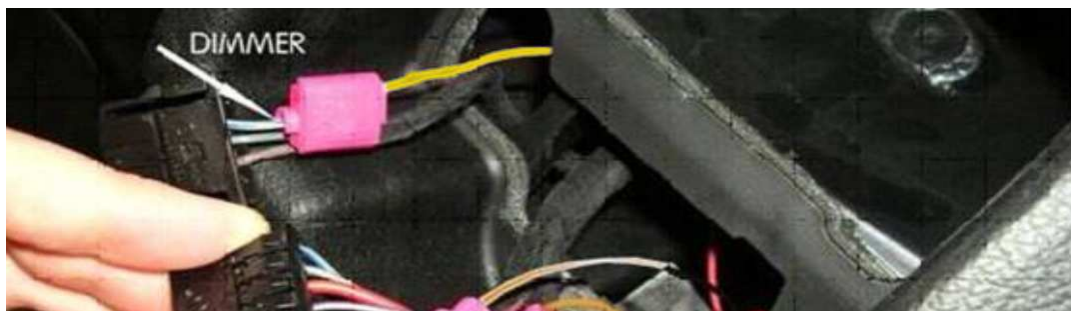
There are two clips on each side, requiring a bit of manipulation to remove the trim. Once the trim is removed, two torx screws become visible which hold the cluster in place. Remove both screws. Pull straight back on cluster module. The cluster will not come out very far, as two connectors need to be removed in the back. There's one on the left and one on the right.



Unlock the left connector first, then the right one. Reach back and push down with index finger nail just at the base of the lever unlocking the lever, while pulling back on the lever with middle finger. Pulling on the lever ejects the connectors. Set the cluster aside.

DO NOT reconnect battery or turn on ignition unless the cluster is fully connected!!

- Remove the plastic kick panel above the foot pedals.
- Remove the headlight switch from the dash by *pushing* in the knob, turning clock-wise half way to the headlight on position, and then pulling out from the dash to release the internal catches. Disconnect the wire harness from the switch.
- Remove the dimmer control, and disconnect it from the wire harness.
- Unscrew and remove the vent cover for easier access. There are two screws, one of which is behind the vent. The vent can be pried off from the left side with a flat screw driver.
- Route the wire harness through the cluster opening down to the floor, except for the yellow wire, which goes directly to the dimmer control. Splice it to the white/blue wire of the dimmer connector using a tap connector.

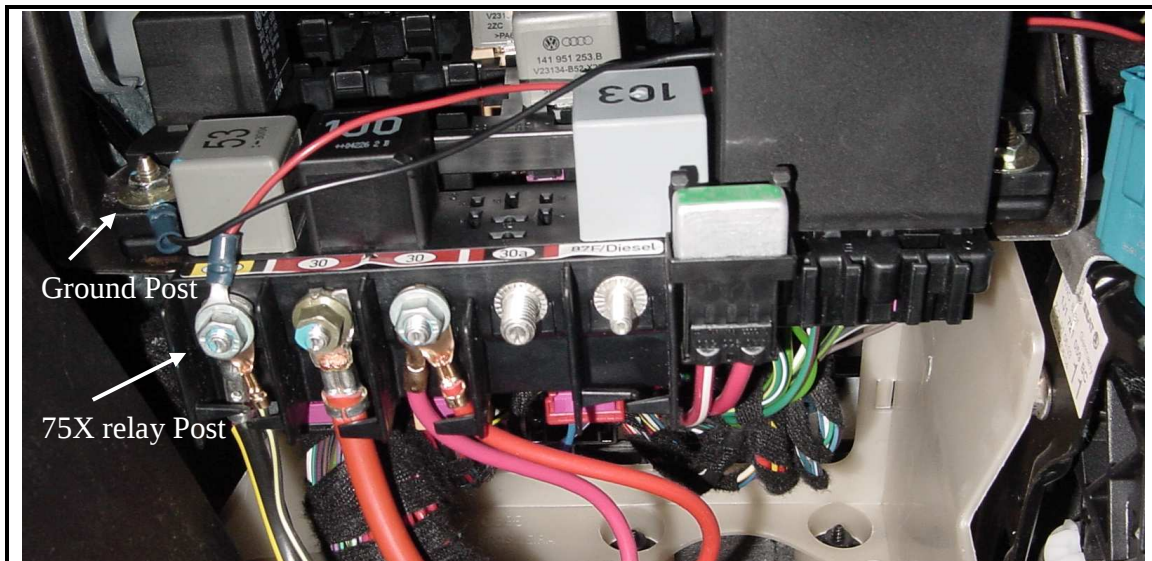


- Reinstall the dimmer and headlight items

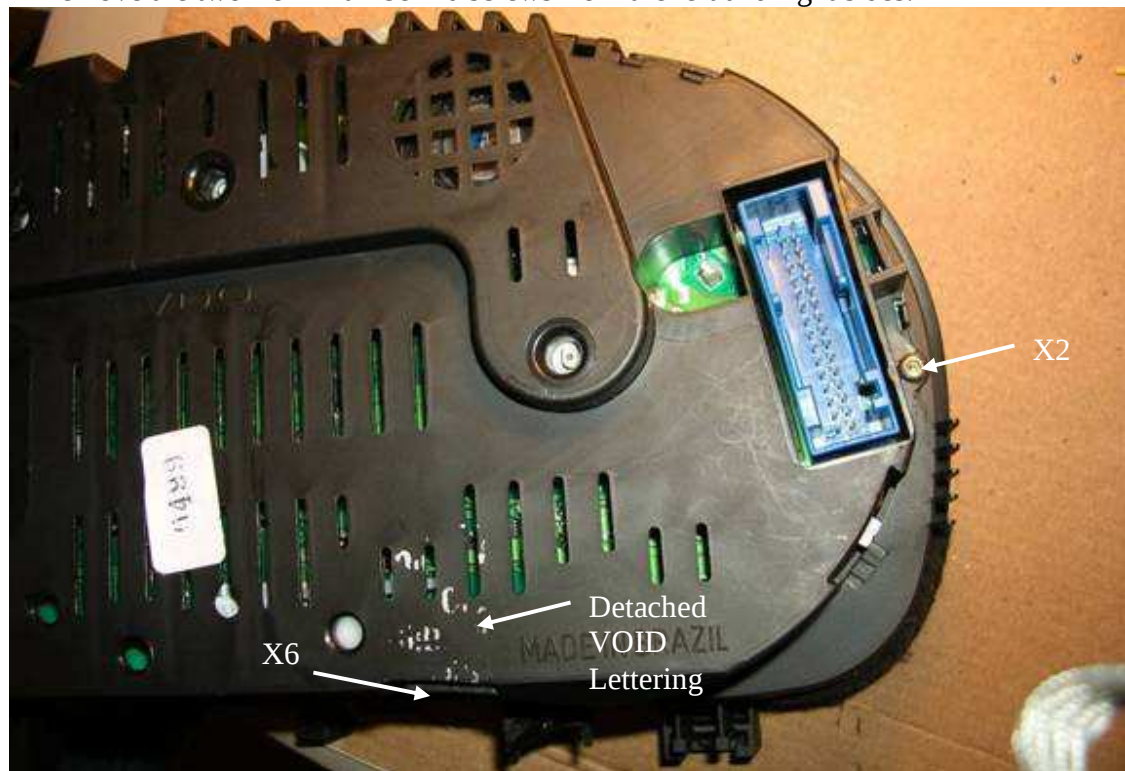
- Run the green MAP wire through the firewall hole located just above the accelerator pedal. Splice into map sensor signal (yellow/black) using a tap connector. Route the wire inside the existing cable sleeve as far as possible and away from heat sources.



- Connect the power and ground wires located just above the footrest. The switched power connection (ACC) is the 75x relay post, and there is a ground post just to the left of the 75x relay.



- Place the cluster assembly face down on a soft surface.
- Remove the two Torx Number 10 screws from the left and right sides.

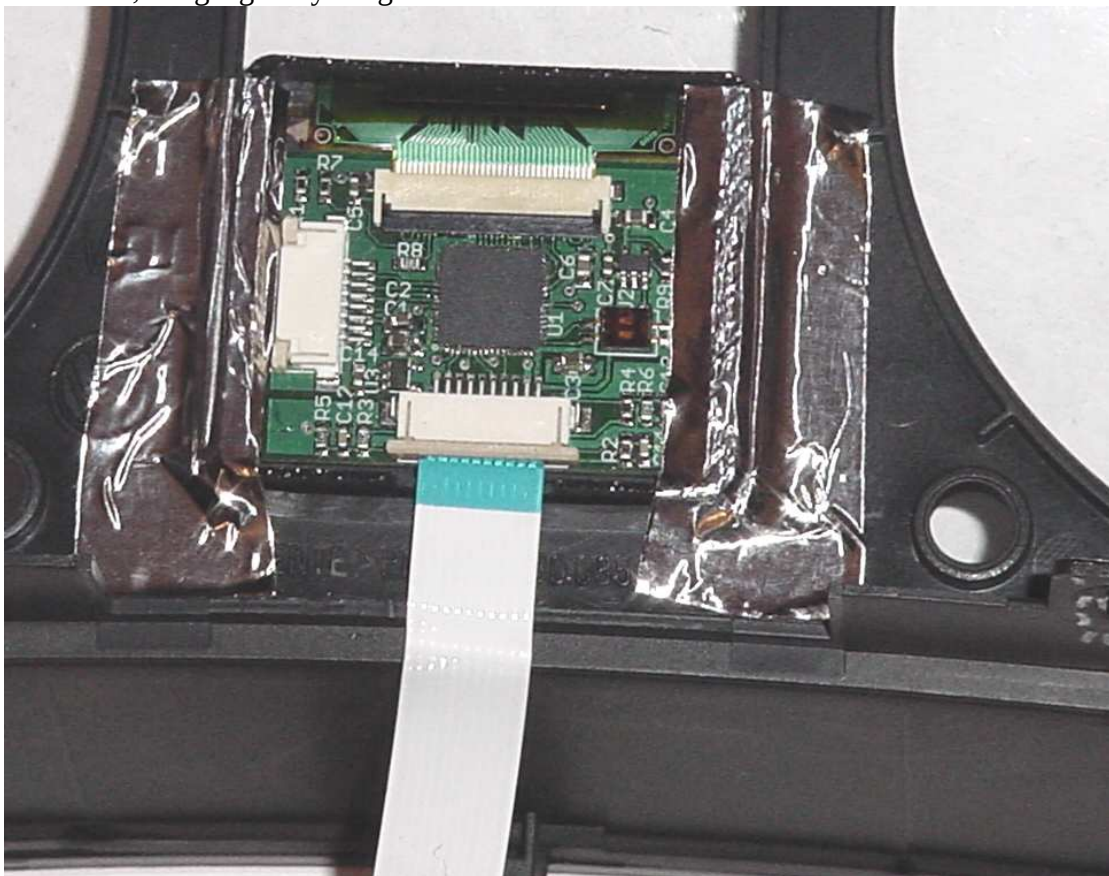


- Remove small strip of white tape covering the seam that separates the two halves of the cluster. Using a hair dryer to heat the tape while slowly removing it will prevent “void” lettering from detaching from the tape.
- Using a small flat screw driver, lift the six plastic retaining clips and slide a small piece of plastic under each one for easy removal.
- Carefully pop the cover off.



- Shave the edge from the bottom of the mid-cluster rectangular frame with an X-Acto knife. This allows room for the gauge flat flex cable. This modification is not easily noticeable, even if the gauge is later removed.

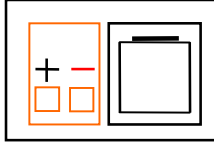
- Using the provided foil tape (sticky and malleable), attach the gauge to the cluster cover. Do not apply tape onto the green screen cable— the cable is easily damaged if the tape needs to be removed. Attach the tape tightly so that when the cluster cover is reattached, the gauge stays aligned.



- Reattach the cluster cover
- Make sure the gauge is still aligned and not tilted. Readjust if necessary.

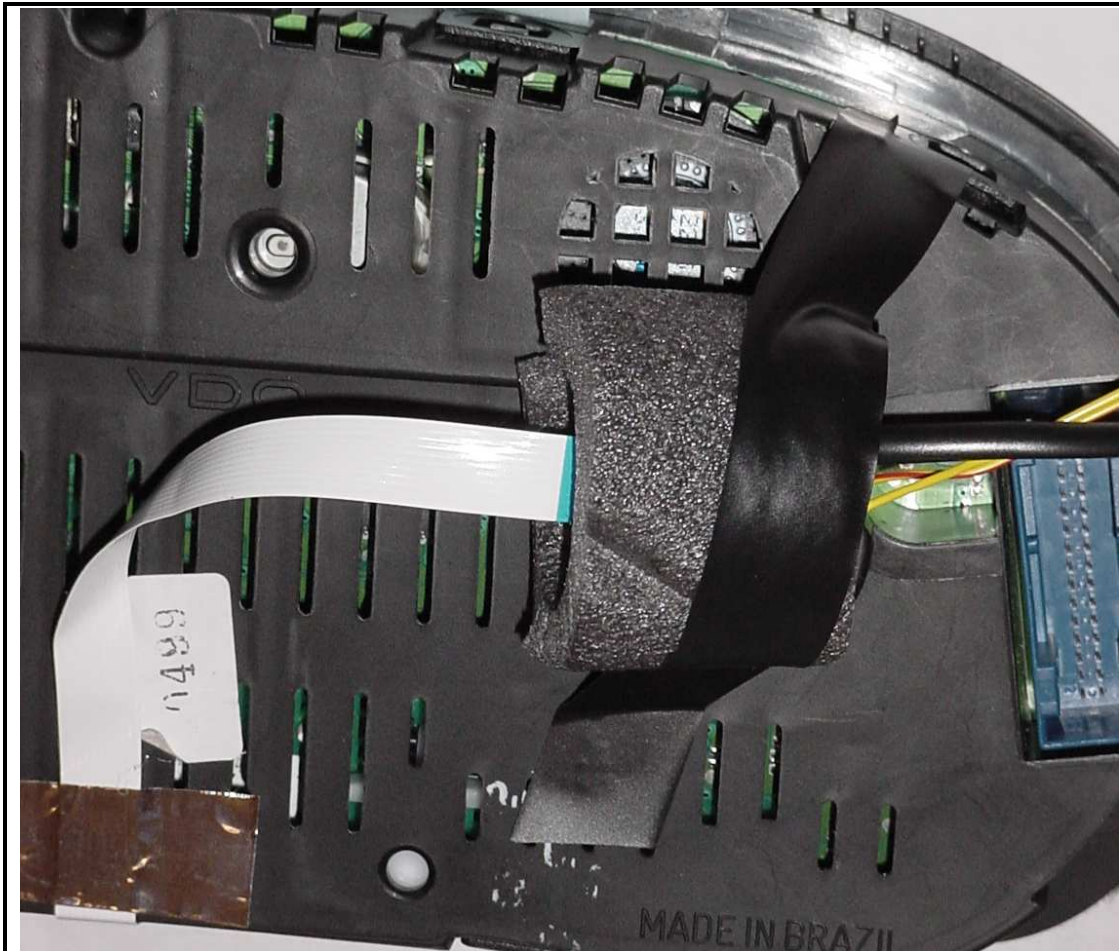
- Replace VOID sticker and TORX screws.
- Secure the flat flex cable to the back of the cluster with the foil tape.

If applicable, route EGT wires from the probe to the cluster location in the dash and connect the EGT wires to the interface board.



NOTE: Type K thermocouple wires have red as negative, opposite to normal convention.

- Connect the wire harness RJ phone-type connector to the interface board.
- Position protective foam over interface board, making sure the circuit board is completely inside the foam.
- To make it easier to reinstall the cluster into the dash, attach the interface board to the back of the cluster with some electrical tape. Attach it near the top right corner (looking from the back).



- Reinstall the cluster. The clips on the two cluster connectors must be 90° as they get inserted. Make sure the clips are fully locked as they are pushed in.

- Use tie-wraps to secure any loose cables, making sure no cables can get snagged by any of the pedals when they are moved.
- Replace the kick panel.
- Re-connect the battery terminal.
- Turn on ignition and verify gauge comes alive.
- Verify EGT temperature rises at idle if you have this option.
- Turn on headlights and adjust dimmer. Verify screen brightness changes with dimmer setting.

Gauge Operation



1) Peak Boost Indicator

The red ring shows the highest level of boost within the last 60 seconds. Any time the boost pressure exceeds the current peak level, the 60 second timer is reset. When the 60 second timer expires, the peak level falls down to the current boost level.

2) MAP Sensor Saturation Indicator (for OEM stock 2.5 Bar MAP sensor only)

A peak boost ring terminated by a white mark indicates the MAP sensor has saturated, and actual boost pressures may have exceeded the output limits of the sensor. The maximum range of the stock 2.5 Bar sensor is 250 kPa, or 36.3 PSI absolute before the sensor saturates. Depending on your elevation, the relative saturation pressure will vary. At sea level it is 1.5 kPa, or 21.6 PSI.

If the saturation level is reached frequently, upgrading to a 3.0 Bar MAP sensor is suggested. DO NOT replace the stock 2.5 Bar MAP sensor with a 3.0 Bar sensor without having your ECU reprogrammed by a performance tuner.

3) MAX EGT Indicator

After 10 seconds of idle when the boost level falls below 1 PSI, the maximum EGT level will be displayed. When the boost level rises above 1 PSI, the current EGT will be displayed again. The max EGT level is only displayed if it is higher than 300°F.

4) Sea Level Pressure Indicator

The gauge is initially calibrated with 0 being set to sea level atmospheric pressure. Most mechanical gauges are calibrated this way. For higher elevations, the atmospheric pressure is less, so the gauge will display some vacuum (the gauge will display down to -0.03 Bar, or -0.5 PSI).

If you prefer to calibrate the gauge so that the needle shows 0 for the atmospheric pressure at your elevation follow the following procedure:

i) Turn off the ignition completely for at least 15 seconds or until you hear a relay click. This will remove power to the MAP sensor.

ii) Very slowly turn the ignition until the gauge turns on. As soon as the gauge comes on, a calibration indicator should be visible. At this point both the MAP sensor and the instrument cluster have not yet received power, but the ACC is on and the gauge has power.

iii) Now turn the key until the next détente and the cluster receives power, but do not start the car. At this point the MAP sensor also receives power, and the gauge will begin to calibrate when it detects a voltage from the sensor. The needle will sweep full scale, and when it returns to 0 it is calibrated to your elevation. This pressure is stored in non-volatile flash memory.

NOTES:

The green marker will now show how much boost pressure your turbo needs to generate to achieve the pressure at sea level.

If no MAP sensor voltage is detected within 30 seconds of starting the calibration procedure, the gauge will calibrate to sea level.

You may perform the calibration as many times as you want, especially if you travel to different elevations.

If there is an error during the calibration, the sea level pressure marker will be yellow instead of green, and the gauge will revert to being calibrated to sea level. An error could occur if the gauge loses power while it is storing the information to memory and the information is corrupted. If this happens, simply perform the calibration again.