



COLD AIR SYSTEM

Installation Instructions for:
Part Number 21-493
1999.5 - 2004 Volkswagen Golf/GTI 1.8L Turbo
1999.5 - 2004 Volkswagen Jetta 1.8L Turbo

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Instruction Part Number: 10-353
1999.5 - 2004 Volkswagen GTI 1.8L Turbo C.A.R.B. E.O. #D-392-24
1999.5 – 2004 Volkswagen Jetta 1.8L Turbo C.A.R.B. E.O. #D-392-24
2004 Volkswagen GTI 1.8L Turbo C.A.R.B. E.O.# Pending
2004 Volkswagen Jetta 1.8L Turbo C.A.R.B. E.O. # Pending
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Congratulations! You have just purchased the finest Air Induction & Filtration system for your car at any price!

The **AEM** Cold Air System is the result of extensive development on a wide variety of cars. Each system is engineered for the particular application. The **AEM** Cold Air System differs from all others in several ways. We take the inlet air from outside of the engine compartment where the inlet air is considerably cooler than the hot underhood air. The cooler inlet air temperature translates to more power during the combustion process because cool air is denser than warm air. **AEM** has conducted extensive inlet air temperature studies and we have seen temperature reductions of up to 50 degrees by pulling air from outside of the engine compartment. The air mass flow to the engine is increased because of the increased airflow *and* reduced inlet temperature, which translates to more power. The **AEM** Cold Air Systems are **50 states Street Legal** (some models and years still pending) and come with complete instructions for ease of installation.

Our system is constructed of lightweight aluminum and then painted with a zirconia based powder coat for superior heat insulating characteristics. The aluminum will not crack in extended use like plastic and it is actually lighter than plastic. The tube diameter and length are matched for each engine to give power over a broad rpm range. Unlike the plastic systems that use a continually diverging cross section, we take advantage of the acoustical energy in the duct to promote cylinder filling during the intake valve-opening event.

Our Dyno testing as well as **independent dyno tests** (see 7/97 Sport Compact Car Magazine) prove that the **AEM** Cold Air System produces as much as twice the power gain than any other system on the market.

Bill of Materials for:

Part Number 21-493

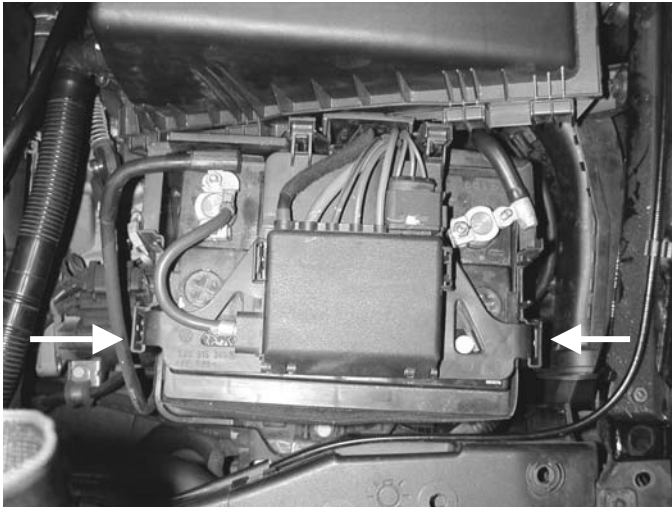
<u>QTY</u>	<u>PART #</u>	<u>DESCRIPTION</u>
1	2-512	Inlet Pipe
1	21-202	2.75" Air Filter & Clamp
3	444.460.04	6mm Nut
4	559999	6mm x 25mm x 1mm Washer
1	1228599	Soft Mount
1	5-272	2.75" Silicone Hose
1	2-649	Vacuum Hose Adapter
2	103-BLO-4420	2.75" Hose Clamp
19"	65004	5/8" Vacuum Hose
2	99024.032	1" Hose Clamps
1	10-353	Instructions
1	10-905	Warning Decal
2	10-922S	AEM Silver Decal
1	10-400W	White AEM License Plate Frame

Read and understand these instructions **BEFORE** attempting to install this product.

1) Getting Started

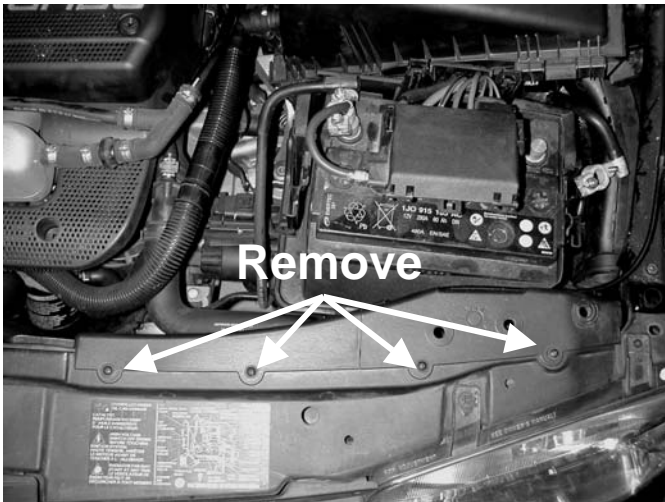
- a) Make sure vehicle is parked on a level surface.
- b) Set parking brake.
- c) Jack the front of the vehicle and support with properly rated jack stands.
- d) Lift the plastic battery cover and disconnect both battery terminals.
- e) If engine has run within the past two hours let it cool down.

2) Removing the stock air inlet system

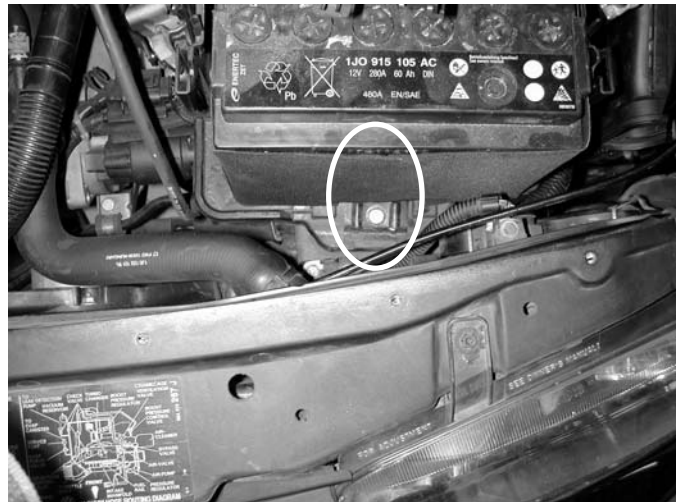


a) Pull the battery box cover straight up off of the battery box. Squeeze the tabs on the sides of the wire harness tray and lift.

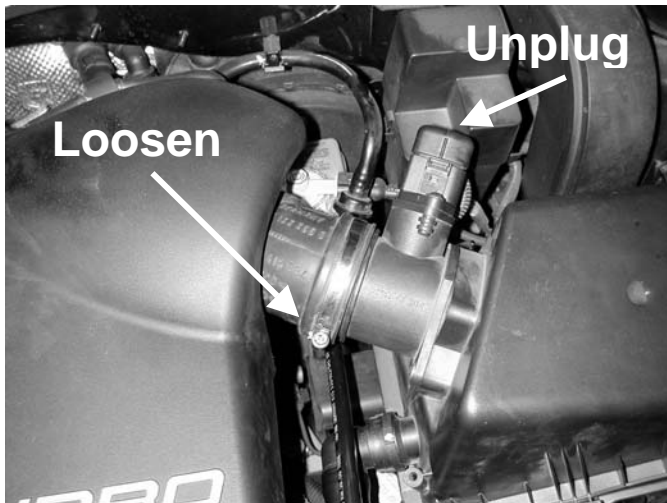
b) Remove the wire harness tray from the vehicle.



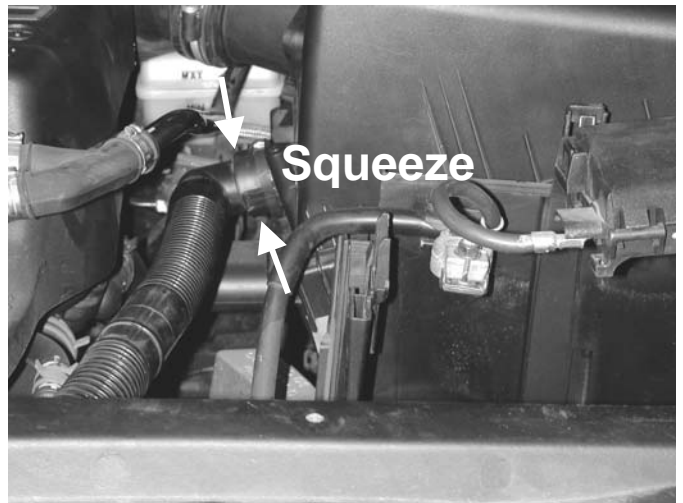
c) Remove the four screws along the top of the radiator support. Remove the two plastic covers.



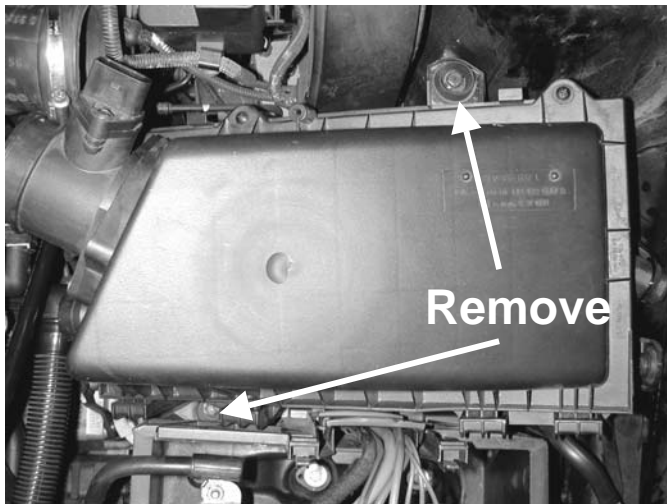
d) Remove the battery hold down bolt and remove the battery from the vehicle.



e) Unplug the wire harness from the MAF sensor. Loosen the hose clamp on the engine side of the MAF sensor. Pull the rubber tube off of the MAF



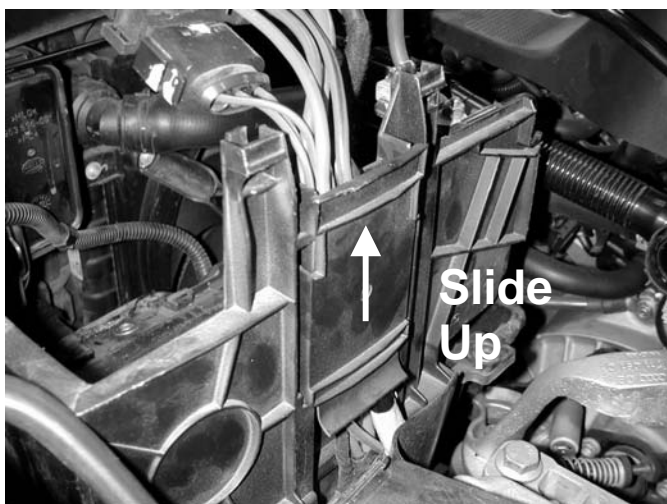
f) Squeeze the top and bottom of the breather hose. Pull the breather hose clear of the air box.



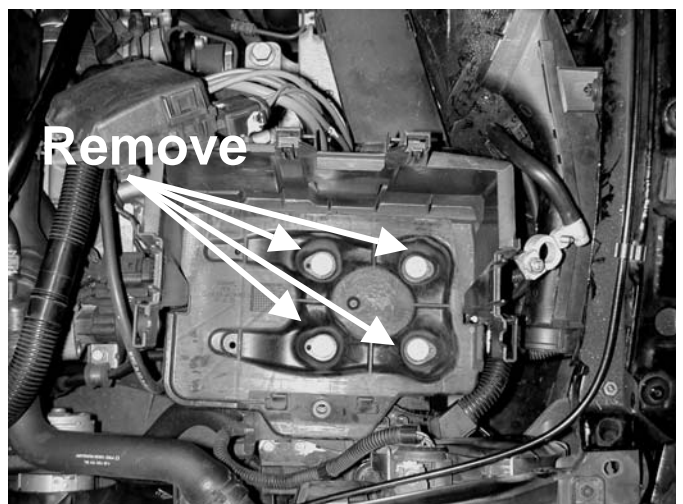
g) Remove the two bolts that retain the air box. Remove the air box and MAF sensor from the vehicle.



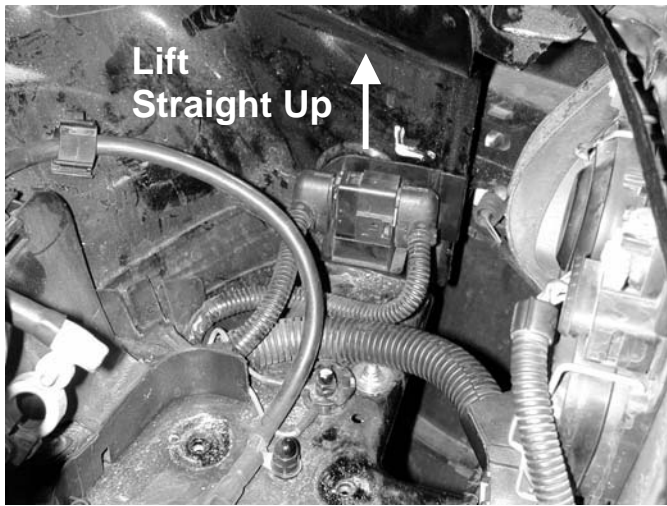
h) Remove the nut that secures the lower air duct to the fender well. Remove the lower air duct.



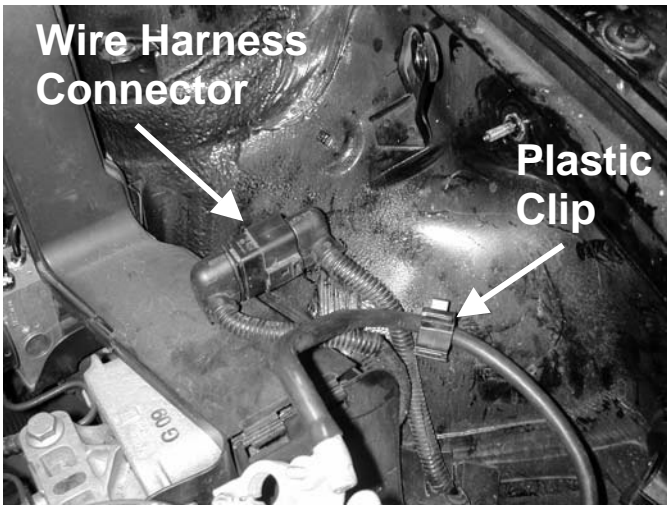
i) Slide the wire channel upwards and remove it from the back of the battery box.



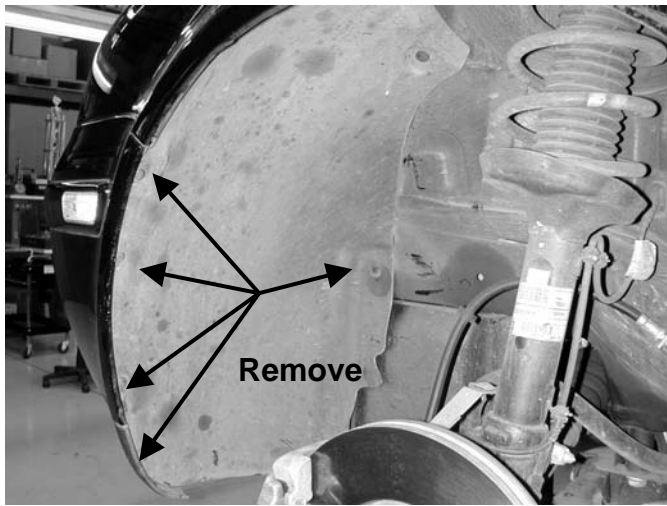
j) Remove the four bolts that hold the battery tray in. Remove the battery tray from the vehicle.



k) Lift the wire harness connector out of the plastic cradle on the inner fender well.



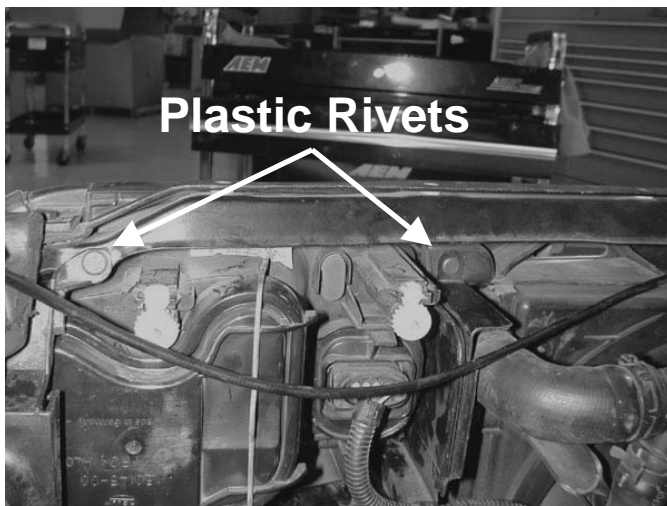
l) Move the wire harness removed in the previous step to the opposite side of the plastic ground cable clip.



m) Remove the screws retaining the plastic wheel well liner. Pull the plastic liner back to expose the area behind the front bumper.



n) Squeeze the tabs on the plastic cradle that used to hold the wire harness connector in the engine bay. Remove the plastic cradle.



o) Remove the two plastic rivets along the top edge of the radiator support. These rivets are released by pushing the center through with a small, blunt object.



p) Remove the one plastic rivet underneath the headlight housing.



q) Pull the plastic guard from the engine bay. This piece will not be reused with the **AEM** inlet system.

3) Installing the AEM Cold Air Intake

a) When installing the **AEM** intake, DO NOT completely tighten the hose clamps, MAF sensor assembly or the mounting tab hardware until instructed to do so later in these instructions.



b) Using one supplied washer and one Nylock nut, install the supplied rubber mount into the hole beneath the battery tray that is towards the fender.



c) The rubber mount should be installed from the bottom, with the washer and Nylock nut on top.



d) Loosen the two Phillips head screws that secure the MAF sensor to the air box.



e) Install the MAF sensor back into the stock rubber intake hose using the factory hose clamp. Loosely install the coupler onto the other end of the MAF sensor with the supplied hose clamps.



f) Place one of the supplied washers on the stud that the lower air duct used to be mounted to.



g) Insert the **AEM** inlet pipe from the engine bay down into the fender well. Loosely secure the MAF sensor end of the **AEM** inlet pipe to the MAF sensor with the supplied hose clamp.

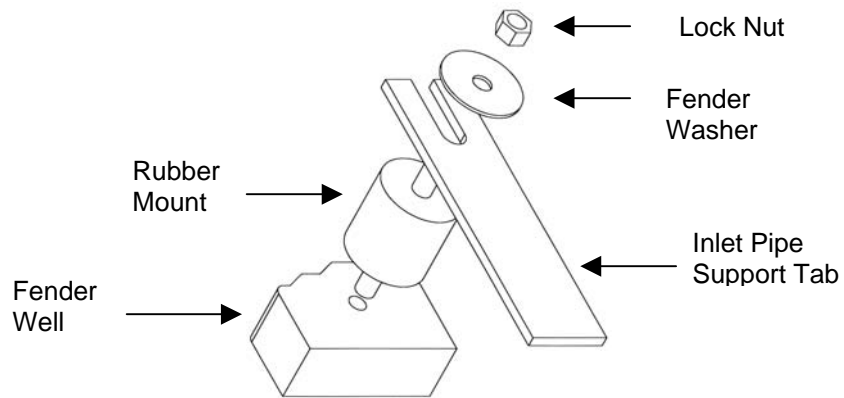


h) Loosely secure the upper bracket to the stud from the previous step using another one of the supplied washers and Nylock nut.

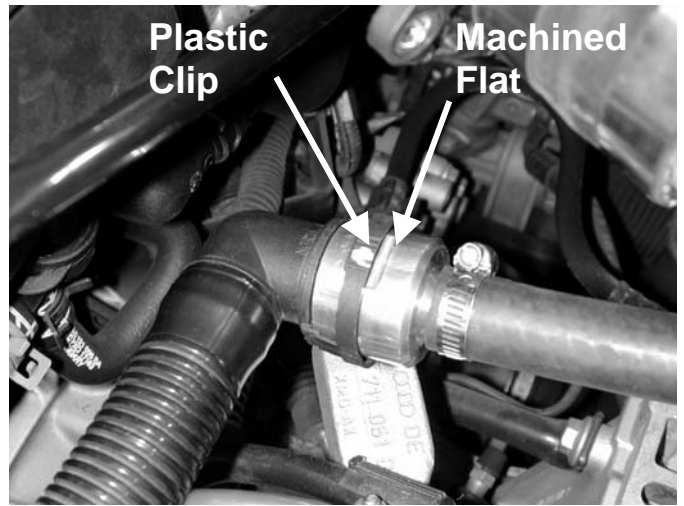


i) Loosely secure the lower bracket to the rubber mount installed in step **3a** using the last of the supplied washers and Nylock nut.

Refer to this diagram for proper rubber mount installation:



j) Install the **AEM** filter on to the end of the **AEM** inlet pipe with provided hose clamp. Adjust the inlet pipe and filter to ensure that it does not contact the vehicle at any point. Snug the Nylock nuts and hose clamps.



k) Connect the factory breather hose to the **AEM** vacuum hose adapter. Line the clips on the plastic hose up with the flats machined into the adapter. It may be helpful to lubricate the o-ring with a small amount of clean engine oil. Use caution to avoid damaging the o-ring.



l) Install the supplied 5/8" vacuum hose section from the **AEM** adapter to the nipple on the back of the **AEM** inlet pipe with the two supplied 1" hose clamps. Route the hose in a broad arc under the **AEM** inlet pipe to avoid kinks.



m) Use the supplied plastic zip tie to secure the large breather tube to the smaller one just above it.

- n) Re-assemble the vehicle in the reverse order of disassembly. The large plastic cover behind the headlights that was retained by the three plastic rivets does not need to be reinstalled.
- o) At this point the entire intake tube and filter can be re-adjusted for position and alignment. Make sure that no part of the **AEM** intake rubs anywhere along its length. **Critical points to check are on the corner of the plastic battery box and at the bend in the pipe just above the air filter.**

4) Final inspection of installed components

- a) Verify that no items are left loose in the engine compartment before you do the initial start up.



Before



After

**For Technical Inquiries
Please E-Mail us at
tech@aempower.com**