



How to Modify Your Air Box

Cars: Any VW with an air box

Time Required: 45 Minutes - 1 Hour.

Tools Needed: Jigsaw with metal blade, 200 grit sandpaper, Fuel line grade hose, (4) brass barb unions, (8) small hose clamps, zip ties, 8" length of aluminum dryer duct, duct tape, diagonal cutters, (2) flat head screw drivers

Everyone knows cooler denser air makes more power than hot air. Here's a way to modify your stock air box to get maximum cool air flow, nice deep throaty sound on hard acceleration, and snappier healthier throttle response at a fraction of the price of a cone type filter.

Procedure:

1. With the engine cold (because it would suck if you burned yourself) remove the stock air box by removing the rubber bands at to engine side of the air box and set them aside. (See, now aren't you glad the engine was cold. :-) Loosen the 7mm hose clamp on the air box lid and remove the hose from the air box. Pop the clips open at the Mass Air Flow Sensor (the gizmo with the wire bundle just behind the air box) loosening the MAFS from the air box. Pop the clips at the front and rear of the lid and remove the lid. Remove the paper filter element. Look down into the air box and you'll see a flapper at the back of the air box and the screws retaining the screen and hose on the front of the air box. Remove the screws that hold the front and rear air tubes in place and remove the tubes. Located in the front fender is a adapter for the front air tube, remove this completely. Remove the screws that hold the screen in place and remove the screen. You can leave the flapper in place if you like. The bottom part of the air box should now come out pretty easily with some wiggling.
2. In the opening just behind the headlights and below the bottom of the air box is the charcoal canister. Amazingly enough, this fits in the exact same place on the driver's side of the car leaving a perfect opening for drawing in cool air into the air box. You need to drop the plastic baffles that attached to the bottom edge of the front spoiler and let them hang. Cut the hoses coming off the char coal canister leaving enough length on each to attach one of the brass barb fittings. Mark the hoses with masking tape and a marker so you can connect the proper hose back to the proper opening on the charcoal canister later. Install the brass barb fittings into each of the original charcoal canister hoses and secure with small hose clamps. Crawl under the passenger's front bumper and find the charcoal canister. It is held in place by three protruding tabs and a locking clip. Find the clip, press it in and push up wiggling the canister until it come loose. Now simply reinstall it in to the same location on the driver's side under the battery. I had to adjust a relay back in the battery tray so the canister would seat properly. If the canister sits a bit loose in its new home, use a long nylon zip tie to secure it in



place. Now run one at a time, lengths of fuel line grade vacuum line from the original canister hose to each of the hoses on the canister now located on the opposite side of the car. I ran the vacuum lines down and inside the front engine mount support frame and secured the hoses with zip ties. Add the remaining brass barb fittings and hose clamps to finish the relocation of the charcoal canister, following the location indicated by the numbers on the masking tape you used earlier. Don't reverse these, your car may not run or **WORSE!**

- Using a jig saw, cut away the entire front (the side that sits just behind the headlights facing forward) bottom side of the lower half of the air box as shown below leaving enough of the front edge to hold the filter



Use the sand paper to clean up, smooth and de-booger the rough edges made by the saw. As you can see, cut just at or just below the lip that would normally hold the paper filter element, you'll replace that with a K&N filter charger anyway. (You did remember to buy a K&N filter charger, right...)

- Cut a piece of dryer duct about 8" long. (Better use a tape measure, most men can't judge 8 inches accurately or so my x-girlfriend tells me.) Tape the wire ends and rough edges with some duct tape to smooth the surface and reduce the risk of sticking and or gashing yourself with the wire (trust me on this one). This will help duct the cool air from below the car into the gaping hole you just cut in the front of your once stock air box.



Here you can see the absence of the charcoal canister and see the extended vacuum lines (upper right hand corner) running deep into the side fender and down under the front engine support frame.

- Replace the lower part of the air box into it's original location and install the rubber bands on the engine side shown below.



- Now install the dryer duct into charcoal canister opening and direct it into the air box shown below.



- The lid needs some modification too. (Surely you didn't think that's all there was to it, no-way Jose!) You'll have to be pretty good with (2) flat head screw drivers at once to get the snorkel out of the lid. There are two tabs on opposite sides of the snorkel. Jamb the flat head screw drivers into the opening where it joins the MAFS between the snorkel and sides of the lid opening and push the tabs in

disengaging them from the detents. Hold the snorkel in your hand and turn the lid upright so the MAFS opening is facing down. Now bang the lid on a work bench while pushing on the snorkel to loosen it from the lid. This is where it gets tricky with the lid, snorkel, and two flat head screw drivers. Sooner or later the snorkel has to come out. (Or you'll bash your hand, loose your temper and cut that bastard out with a razor knife, but that's just speculation.) I used some **VERY** sharp wood chisels to remove the grid like crap on the inside of the lid to smooth the air flow and help direct it towards the MAFS opening. Once the bulk of the grid is removed sand until smooth.



8. Install the K&N filter charger (you should have bought) and then secure the lid like stock. Don't forget to reattached the MAFS and air pump filter tube to the top front of the air box lid. Re-secure the baffles at each corner of the front spoiler. Remember you loosened them to move the charcoal canister from one side to the other.



Impressions: Upon starting the engine you will hear the difference in tone and sound. You will notice more power through out the entire RPM range and the car will no longer run out of breath at higher speeds like when your beating the pants off that high school punk and his friends in daddy's new Mustang GT. You'll love the sound of the intake breathing deep and gulping in all that fresh cool air. I'm not sure if this yields any measurable horse power or torque gains but you **WILL** feel and hear the difference, guaranteed. In the 3+ years I've had this mod, driving in sun, rain, and snow, I've never had animals, leaves, rain or snow get into the air box.

Additional Comments from Todd Taylor: After having installed a K&N filter, P-Chip, and Neuspeed exhaust, I guess you could say I was more than disappointed with the minimal performance gains I felt for the hundreds of dollars spent. It wasn't until I did this air-box mod that my 'Butt-Dyno' screamed, "Wahoo!" Not only is this modification virtualy free (especially compared to a P-Flow), it feels like it actually made my car faster, especially at freeway speeds. Also, if done correctly, this air-box mod helps to minimize the "hot air problem" that many people are spending hundreds of dollars to fix by buying products like the EuroSport Cool-Flow. Not that this is a bad product, but I got my VR6 to growl and go like heck for less than a tenth of the cost!

Michael Bigus
1997 GTI VR6

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