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## Volvo S60/V70R 3.5" (AudiS4) MAF, airbox and intake

### Directions for installation

#### Equipment you will need:

- Long flathead screwdriver
- Short flathead screwdriver
- Metric socket set with extensions
- 5.5mm, 7mm, & 8mm 1/4 " drive sockets
- 2mm & 4mm hex keys
- telescoping mirror is very helpful
- Several long 1/4" drive extensions are also very helpful
- Electric terminal pin removal tool

- (1) Aluminum Airbox

#### Hardware for mounting (all types of) MAF to Airbox

- (2) M5 x 18 black socket head cap screw
- (2) M5 nylon lock nut
- (4) M5 hard plastic washer
- (4) Santoprene rubber washer

#### Hardware for mounting MAC or Peirburg TCV to Airbox

- (2) M3 x 10 cap screw [for MAC style TCV]
- (2) M3 x 10 cap screw [for Peirburg bracket]
- (1) Bent aluminum TCV mounting bracket [for Peirburg TCV]
- (2) M3 nylon lock nut
- (4) M3 black oxide flat washer

#### MAF's

- Bosch S4 MAF with new sensor
- S4 MAF electrical connector

#### Intake

- (1) 3" polished aluminum pipe with barbs
- (1) Snabb MAF to Pipe reducing coupler for S4 MAF
- (1) Snabb pipe to turbo coupler with T for PTC heating element
- (1) ABA #56 clamp
- (2) ABA #48 clamps
- (1) ABA #44 clamp
- (1) ABA #12 clamp
- (2) NORMA 18mm-22m clamps

**BEFORE YOU INSTALL:** This product requires custom tuning from a professional tuner in order to work. Without a retune your car will not run. We recommend Hilton Tuning. Please note that modification of your car is done at your own risk!

**Expected time to complete:** 2-4 Hours. Difficulty level- moderate.

**Tech tip:** Our silicone connectors are very thick and can be difficult to install. Use a small squirt of WD40 on the inside of the silicone to lubricate it just prior to installing each piece. This will make the installation significantly easier.

**Applications:**

04-07 S60R, 04-07 V70R, 05-09 S60T5, any P2 vehicle with the R airbox and K24 turbo

**Instructions:**

\*\*Before you start it is really important that you allow the car to cool off for at least a couple of hours before you start working on it. Alternately you can place a fan or two on the engine to help cool it off. Note: It is beneficial for it to be a room temperature. Conversely it is not recommended to work in winter temperatures as the plastic becomes brittle and easy to damage\*\*

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## Part 1. REMOVE STOCK INTAKE PIPE AND AIRBOX

1. Remove black cover that is directly behind the headlight and to the right of the airbox by depressing the three tabs and pulling up to remove it, this will allow access to the 8mm bolt on the driver's side of the airbox.
2. On the passenger side of the airbox remove the two 8mm head screws (on top) that secure the snorkel to the airbox. Pull the snorkel away from the airbox to release the tabs that are out of site and move the snorkel to the side.
3. Release the tab on the MAF connector and pull connector up and away from MAF. Use the screwdriver or 7mm driver to loosen the clamp that holds the factory Turbo intake pipe to the MAF.
4. Remove the (3) 8mm head bolts that secure the airbox at the base. Release TCV from drivers side of the airbox and move to the side. You are now ready to remove the airbox. Pull airbox up and out, while pulling away from stock Turbo intake pipe until it is completely free.
5. Remove the 2 vacuum lines from the base of the stock pipe. There is one vacuum line on each side of the PTC. They are not held on with clamps you only need to twist them slightly to break them free and then pull hard to get them off the plastic barbs on the pipe.
6. Remove Breather line (Rubber elbow) from the large PTC elbow. You will need to destroy the factory oetiker clamp that is on the PTC elbow to do this which is why you get a replacement in the kit. You can use a small flathead screwdriver to deform the clamp enough to get it off. Then you can separate the elbow from the PTC nipple by inserting a small flathead between the hose edge and the small lip or shelf on the PTC that the elbow sits against, pry upward gently and then pull the elbow off the PTC. Next remove the electrical connection to the PTC heater. There is a wire spring clip at the base of the connector that you will need to depress and hold down while you pull the connector off. You will also need to depress the spring clip when you reinstall the connector.

7. Remove clamp (that holds pipe to the turbo inlet) from base of pipe. You may not be able to see the clamp without a mirror or alternately you can jack up your car and remove the splash guard to get a good look at how it is positioned. (Typically the head of the clamp is tilting back slightly with the head facing up and toward the firewall) Use a flathead screwdriver, 7mm ratcheting wrench or a wobble head 7mm socket with an extension to loosen the nut. Once it's very loose (If it's not very loose you will not be able to get the hose off) and you're sure nothing else is attached to the pipe, pull it off the turbo inlet with a lot of force and at an angle then remove it from the engine bay. We have found that it is easiest to access the clamp from over the top of the engine to the passenger side of the upper torque mount.
8. *(\*\*\*If you did not get a PTC preinstalled in your new intake pipe from Snabb\*\*\*)*
  - A. Remove the PTC from the factory intake pipe, cut the odd shape grommet off the PTC and clean the PTC well with brake cleaner or soap and water making sure that the inner orifices are completely cleaned out.
  - B. Using a dremel with a cutter wheel/sander, a grinding wheel, or a belt sander, grind down the bottom lip of the PTC so that it will fit into the T on the Pipe to turbo silicone connector. Sand any rough edges off the lip.
  - C. Push the PTC into the connector and clamp it with the electrical connection facing the front of the car. Do a test-fit to verify that it is in the correct position. The silicone boss for the PTC is manufactured long and should be trimmed down if needed. trim it down using the #12 clamp as a guide with a **brand new** razor blade, using caution not to cut the hose anywhere else.

Now that you have everything removed you can start getting ready for the installation of the new intake pipe and airbox. As an overview you will want to install the bottom half of the intake pipe first (lower coupler and aluminum pipe) then get the TCV bracket or TCV on the airbox before installing the airbox and MAF into the car. You have to position the airbox, fresh air snorkel, MAF and upper coupler of the intake tube at the same time before installing any bolts or tightening any of the upper clamps. Once everything is lined up you can install bolts clamps and tighten everything down!

## PART 2. INSTALL BASE OF INTAKE PIPE TO TURBO.

1. Attach the "Pipe to turbo" silicone reducer with the 1" boss, and the #44 clamp to the turbo. (As noted above: use a small amount of WD40 to lubricate the inside of the hose to aid installation on all the hoses) **Loosely** tighten the clamp over the turbo inlet (you don't want to tighten it all the way until both hoses are installed and the pipe is positioned correctly away from the brake lines and coolant lines.) Slide a 64-89mm clamp over the silicone then carefully (so as not to scratch it) slide the pipe into the connector and position so the opening of the barbs are pointing toward the engine. Attach the PTC electrical connection.
2. Attach the PTC Elbow to the PTC and clamp with the included 1" clamp to keep it in place Note. You may need to rotate the elbow slightly clockwise to make it match up to the new/slightly altered location of the PTC
3. Attach vacuum lines to the appropriately sized barb on the pipe.

## PART 3. INSTALL AIRBOX

1. Before you install the airbox: (a) Remove EVAP purge valve from it's stock mounting point on the bracket that sits behind the Drivers side headlight. The new airbox will sit directly on top of the bracket and the purge valve be pushed down out of the way (b) The airbox comes preinstalled with a bracket for an OEM Pierburg TCV. The TVC will slide onto the bracket and gravity will keep it in place. If you have a Snabb (MAC valve) TCV then you will remove the aluminum bracket and bolt the TCV directly to the airbox with the vacuum lines pointing down and attached with the longer M3x 25mm black oxide socket head cap screws + the M3 flat washers and the M3 nylon locknuts that hold the aluminum bracket to the airbox. Use a 2mm hex key and a 5.5mm socket to remove the bolts and install the Snabb TCV. (c) be aware that this is a rigid one piece airbox and you will have to move the parts around to get them lined up right. The silicone should be lubricated with soap and water or WD-40 before starting this final stage or it will be unnecessarily difficult.
2. Put your new Bosch S4 MAF through the hole with the MAF pointing at 11 o'clock- with the bosses lined up at the 2 o'clock and 8 o'clock notches. Do not install the M5 bolts, washers and nuts yet.
3. Place the 3.5">3" silicone coupler onto the aluminum pipe (lubricate first so you can easily reposition) Make sure the clamp that holds the lower silicone to the aluminum pipe is loose too so that the entire assembly can be moved. Push the upper silicone down and back as far as possible to make room for the MAF and airbox.
4. Reconnect the TCV hoses and electrical connection.
5. Place the airbox into the engine bay just approximately positioning it while you get the upper silicone hose and #56 clamps over the MAF body. Once you have the Silicone connected to the MAF get the fresh air snorkel inserted into the airbox. Once all these parts are connected you can start aligning them.
6. Get the airbox brackets lined up with the 3 mounting points on the car. Tighten down the 3 bolts that attached the airbox to the car. Then bolt in the snorkel reusing the stock bolts. Once these pieces are bolted down go back and get the intake pipe adjusted so that it lines up with the MAF.
7. Bolt the MAF to the airbox using the included M5 x 18mm bolts, plastic M5 washers and santoprene rubber washers. (use the 4mm hex key and 8mm socket with extension if needed) The lower bolt can be hard to get to so you may want to put a small piece of tape inside the socket to keep the nut from falling out. You will put one plastic washer and one rubber washer on each side of the airbox assembly to keep it from loosening with vibration.
8. Rewire the MAF connector. Using a terminal pin removal tool pull the wires out of the stock MAF connector. Install the pins into the corresponding numbered spot in the new supplied connector. Once you have rewired the connector plug in the S4 MAF. (PLEASE NOTE ONCE AGAIN THAT THIS SETUP REQUIRES A RETUNE OF YOUR ECU) If you have any questions about tuning we recommend you contact Robert Hilton at Hilton Tuning.
9. Tighten down all the clamps on the intake pipe double checking that everything is lined up with some clearance between brake lines and other surrounding parts.
10. Install the included AEM dryflow 900 cfm airfilter. Make sure the lip of the MAF and the inside of the airfilter are grease free and clean before installing and clamping.

The airbox was designed to fit with the stock hood liner or without. If you want a more aggressive sound and better looking engine bay remove the hood liner and install the included Snabb Sticker.

Thank you for your purchase and Enjoy!