

The early A1 bodied cars come with a smaller throttlebody then some Audi's and A2's. Replacing the throttlebody with a larger unit without corresponding changes to the intake & exhaust tracts will not have the improvement you are really looking for. The larger throttlebody works very very well with some intake work through a cam or headwork, or exhaust work through a cam, headwork, header, or dual outlet manifold and 2" exhaust. Throttle response is significantly improved, and horsepower can be increased to levels that are very easy to feel.

Tools & Items you will most likely need:

- Get a TB from an Audi 5000. Probably any 80's- early 90's model will work.
- Allen wrench set
- Dremel tool
- Carbide burr and/or 1/4" ball end-mill (carbide)
- Half round coarse metal file
- Various grits of sandpaper
- WD-40 Liquid Wrench or other similar spray-on lubricant
- Carburetor or equivalent parts cleaner
- Flat-tip screwdriver
- An assortment of vacuum line plugs
- A shop vacuum cleaner
- 11mm box-end wrench
- 7mm box-end wrench
- A new throttle body gasket for the Audi 5000 unit from a dealer (part # 037 133 073A)

Note the larger secondary plate of Audi throttlebody on the left



The intake manifold on an A1 is not machined to accept the larger throttle body, however, it can be ported to enable the use of the Audi throttle body. The alternative to porting it is to use a VW or Audi Fox or an Audi 4000 intake.

There are bonuses to either approach and both procedures are described below.

Step 1

Remove your old throttle-body from the car. Do this by loosening the clamps holding the intermediate pipe to the throttle-body and pulling it off. Then remove any vacuum lines connected to the throttle body. There is probably only one in the back. Next, remove the clip holding the throttle cable on the linkage.

Using a flat tip screwdriver, slide the clip towards the rear of the car and it should ease off, allowing you to remove the throttle cable from the unit. Now you

should be clear to remove the four allen bolts holding the unit to the manifold. Be careful to make sure the allen wrench is fully seated in the bolts before you loosen them. The heads on these bolts will strip out fairly easily and you will be totally screwed if they do.

Step 2

Use the carburator / parts cleaner and soak the new TB in it for a few hours.

Step 3

In the picture below you see the linkage has already been swapped to the new unit.

Now that you have the old unit out of the car, you can compare it to the new Audi one. The throttle linkage is different at the point where the cable connects to it. You're going to have to remove the throttle cable attachment linkage from the old one and attach it to the new one. You have to do this because the Audi accelerator cable pulls from a different side.



Using the 11 mm wrench, remove the nut holding the linkage on the primary shaft and take the linkage off, taking care not to "spring" the springs. Do the same to the Audi unit and attach your old linkage to the new unit. You might have to adjust the full throttle switch to make sure it clicks at the right time. **Important** You also have to switch the idle adjuster because the Audi one is just a screw and not a bolt so you will not have enough clearance to adjust it. Use a 7mm wrench to adjust the idle after installation.

Step 4

You'll have to match port your intake before installing the new throttlebody.

Before



Now comes the fun part. You will have to port the intake manifold to match the new throttle-body. First, stuff the manifold with rags or paper towels so no chips or shavings go down the intake tubes. The alternative is to remove the manifold from the engine, which makes this job quite a bit easier. Make sure you count how many rags go in, and remember to count them

on the way out. Kinda like a surgeon counting his instruments and gauze when he's operating.

After you finish that, take a new Audi gasket and trace the outline of the new bore on the manifold. This will be your guide for cutting. There are several methods for removing the excess material. A dremel type tool could be used exclusively, but you should buy at least 2 bits because they get clogged with the aluminum. Spend about 20 minutes on it with a coarse half-round file. It will make short work of the soft metal and won't clog up so easily. I then finish it off with the die grinder (or a dremel if you don't have one) just to smooth things out. Aluminum clogs up the bits really fast, by the way. **Important** Note that you might not be able to grind away everything on the small side of the intake because you risk making a leak if you try to cut it too close.

Outlined

Using the pattern or your traced lines, grind out the material, being careful around the area to the right hand side of the manifold (towards the rear of the car). Be patient, take your time here, do a good job. You just want to blend this area to the new shape, the material is very thin in this area. If you get too hoggish you'll grind right through the side of the manifold. This is an experience you'll surely dislike. The secondary area can be opened up without worrying about breaking through. During the grinding process, use the WD-40 or other lubricant to keep the carbide burr or file from "loading up". Spray liberally and stop frequently to keep the cutter lubricated. Take your time and you'll get good results. Shown below is what the intake should look like when you're done:



After



After you're done grinding out the intake manifold, use the shop-vac to clean out all the shavings and muck that you created. Make sure to get out as much as you can. Whatever you leave behind will undoubtedly be sucked into the engine. Don't forget the rags too!! What was that count again?

Step 5

Now install the new throttle-body. Installation is the reverse of step 1. Plug off any vacuum lines you don't need to use on the new throttle body. There may only be one unnecessary line. After you tighten down the bolts and



hook up all the lines again, you'll need to adjust the throttle cable. The Audi throttle-body's throttle linkage is further back so it puts tension on the cable, opening the throttle. If you don't loosen the cable a bit, you'll end up with a VERY high idle. Trust me, you don't want your car idling at 4,000 rpm. It's not really cool.

Using the Fox Intake Manifold

There are several advantages to using a VW Fox intake manifold, which is bolt-on compatible. Off the car, here is what one looks like...however there are several differences between this manifold and the stock one on a JH engine.



Note where the air regulator is at the middle right in the picture above. It requires a little creativity to plumb this into the A1 Rabbit or Scirocco intake boot, but it is a manageable problem.

Note that this intake manifold is already machined to match the larger Audi throttle body from the factory. It even has the extra piece sticking off the back to ensure proper seal of the idle circuit.



One of the most most important things to note is the location of the cold start valve.



You can install the manifold with the valve in this location, but it will leave a good sized dent in your drip rail the first time the engine torques back. What's the solution? Note that the end on the fox intake is nice and flat...



After a couple minutes with a sanding block, it is perfectly flat.

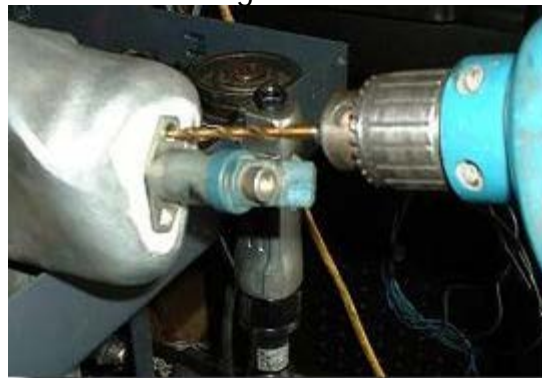
Place the cold start gasket onto the end of the manifold, and mark the location of the holes.



Drill out the center hole to the necessary diameter for the nozzle to fit through it.



Then insert the valve to center it and drill out and tap the mounting holes for the bolts.



Run over it once more with the sanding block to clean off the burrs, and mount the injector.



What about the old location for the cold start valve? Find a Digifant VW Fox and you will see it comes from the factory with a block off plate for the cold start valve. You can install that one, or make a plate of your own.