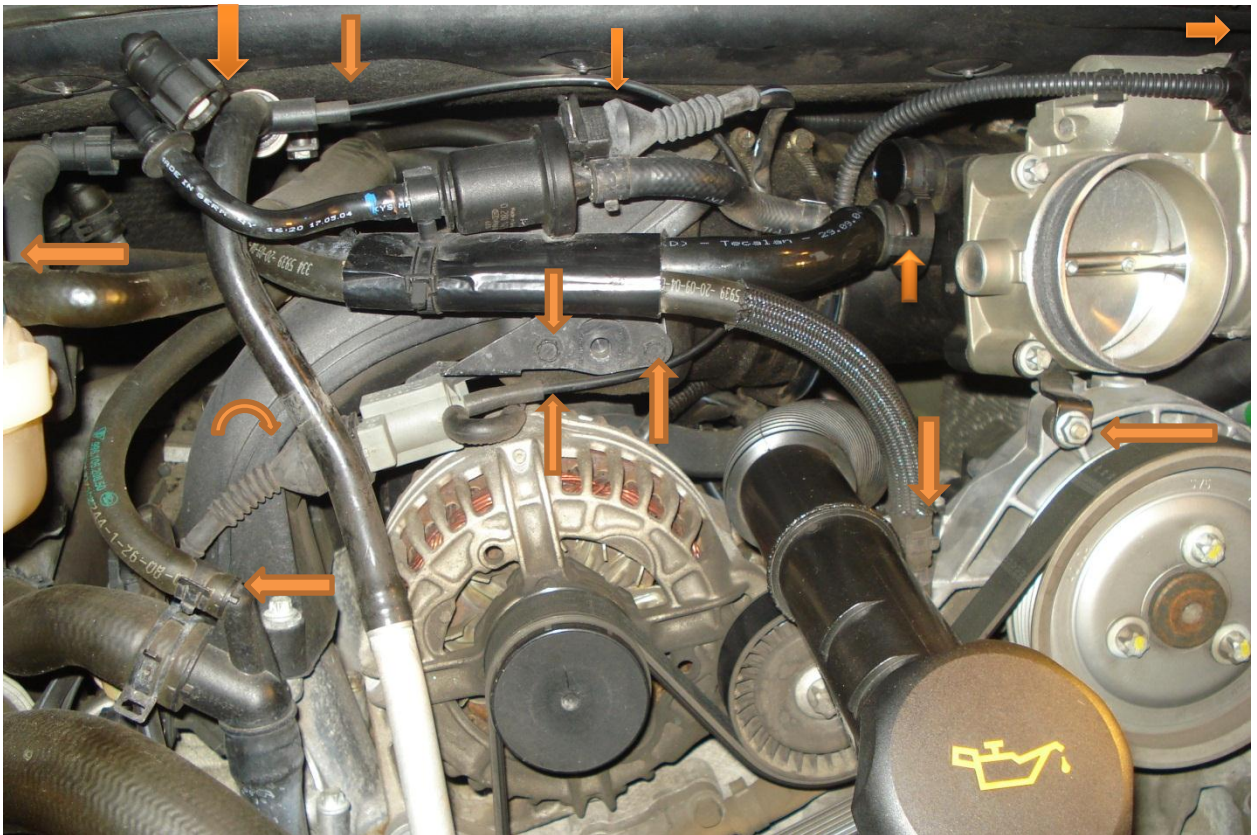


AOS change 2005 Porsche 911

After researching, I couldn't find any DIY for 997.1 model. The one thread found for the 997.1 on Renntech was for the S model (AOS was located in a very different spot-on the right behind the AC compressor). On my 2005 911 C2 the AOS is on the driver side in front of the intake manifold (same side as 996 models). I've found a couple of DIY for the 996s and I decided I wanted to try it myself. I want to say from the beginning, this was quite a difficult job due to the very limited space you have in the engine bay. Of note, I did not lower the engine, I did not remove the driving belt, alternator or coolant tank. So, here are the steps:

1. Air filter box removal.
2. In preparation for Throttle Body(TB) and intake manifold removal, disconnection of several electrical plugs and hoses placed in front of the driver side air intake manifold and alternator(3 electrical connectors, a thin vacuum line, and 3 coolant lines). I've covered the plugs with painter's tape to keep them dust free and the coolant hoses with saran wrap and elastic bands to avoid coolant leak. Of note, before disconnecting the coolant hoses, I loosened the coolant tank cap to relieve the pressure.

Here is a picture with the disconnection points(arrow marks the spot).



3. TB removal: I removed the TB and distributor pipe (the big plastic pipe the TB is connected) in one piece(did not separate them). To do that, I loosened the clamps that link the distributor

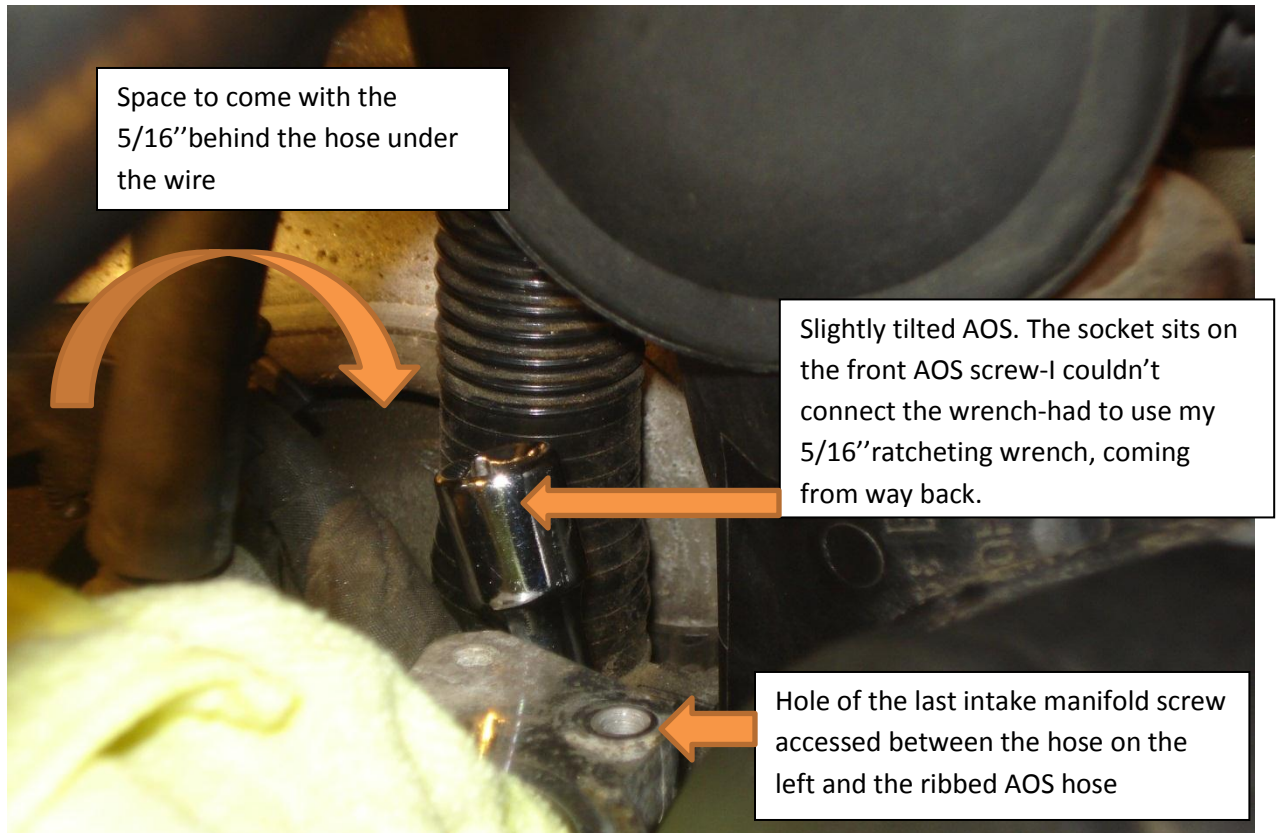
pipe to the intake manifold(2 on each side). After that, I pushed the left rubber collar towards the left intake manifold. The right rubber collar I kept it on the distributor pipe. The rubber collars are quite difficult to push around but once you pushed them as much as they go you can remove the TB and distributor pipe in one piece(hence no need to have a new seal for TB).

After TB/distributor pipe removal.in the back is the tuning pipe(mark the position before removal).



4. Removal of the big plastic tube behind the distributor pipe (tuning pipe). I used the same method as before when removing the distributor pipe. Loosened clamps and pushed the rubber collars toward the air intakes (left and right) and removed the tuning pipe. Care must be taken to preserve the vacuum hose attached to the back of the tuning pipe (it is connected to a piece that sits on the intake manifold right above the alternator-I unscrewed it and put it aside along with the tuning pipe; be careful not to lose a plastic insert that sits between the intake manifold and the little vacuum piece). Very important, before removing the tuning pipe, draw a line from the air intake manifold to the tuning pipe to be sure that you can mount it in the same position/orientation. I covered the two big holes towards the right intake manifold with a couple of rugs for protection.

5. Left air intake manifold removal. And the fun begins! There are 6 screws that need to be removed and as you imagine it will get increasingly difficult to get to them(the one furthest away seems impossible to get out). The space is extremely limited and the screw is located in a tiny space between AOS and intake manifold. I could not put a socket on it (hitting the AOS). The only way I could do it was with a 5/16" ratcheting wrench. This was the most difficult part(so far). When the last screw is out you can maneuver the manifold out, and finally you can see the AOS. Before I moved on, I covered the intake manifold holes with a lint free rag(imagine dropping something down there!).



6. The AOS is hold on top of the engine with 2 screws. There was no way I could access the AOS from under the car (like in the 996 DIY). The one in the back of the AOS is easy to feel and remove(I used the same 5/16" ratcheting wrench). The one in front was a different story. It was in a tiny space, under a thick wire and very difficult to get to it. I had to dive with both hands in the engine bay, feel it with the right hand, lift the wire and with the left hand come with the 5/16" wrench on it. It took a while(I was getting tired at this point) but I've got it. Now the AOS was hold down by the hose connectors. I cut the one that comes from the AOS bottom and bends 90 degrees to go into the engine(there was no way I could release the very difficult snap on clamps Porsche is using for its hoses). The 997 AOS is different than the 996 one. When I ordered my AOS from Pelican parts, I also ordered a new 90 degree connector(along with 3 intake manifold gaskets and a couple of screw type clamps). After I cut the 90 degree hose I could mobilize the AOS from the engine(now connected by 4 hoses). Carefully I pulled it towards

the back of the car and disconnect the hoses(some may still have some residual coolant in them). So, finally half of the work is done!

Pic of engine bay after AOS was out.



7. Mounting the new AOS was next. First, I've loaded 2 screw type hose clamps on the 90 degree hose that goes at the bottom of the AOS into the engine and mounted it to the engine. Next, I've taken the AOS, connect the big hose that goes on the base(left bottom). And fiddled with this assembly, trying to get it into the engine hole and the other hole of the 90 degree hose. It took a while, of course, but it can be done. Another pain was to tighten the clamps on the 90 degree hose, but again with perseverance it can be done. Next, the screw behind the AOS (do not tighten it yet) was a breeze. Now the front one was a different story. Remember it goes into a hole under a wire in a tiny space. I loaded the screw on a socket (using some painter's tape to hold it) and again diving with both hand deep into the engine bay I managed to find the hole. After the screw was in the hole I start to jiggle the AOS around(it was not tightened in the back) and hand tightened the front screw. Of note, the AOS is mounted slightly tilted on the engine towards the driver's side. This makes more difficult to find the right path for the screw. After the front screw was on the right path I tightened both back and front one. At the end I've connected the rest of the hoses on top of the AOS.
8. Mounting back the air intake manifold. Before that I've cleaned the manifold, tuning pipe, distributor pipe and TB with TB cleaner. I've mounted the gaskets and Very Important, preload

the screw that goes towards the front of the car before attempting to position the manifold. After orienting the manifold into the position, before I attempted to fit the foremost (and most difficult) screw I mounted the screw at the back of the manifold (closer to rear of the car) but not tightened it yet. Now I had a fixed screw (the one closer to the rear of the car) and I could move the manifold on a fixed path. I moved the manifold on the fixed path in small increments until the screw fell into its place. Next I had to reach back and hand screw it (finger screwed it) until I had enough clearance to slip the 5/16" and tightened it a little. Now, I removed the screw close to the rear of the engine and I could pivot the manifold a little, enough to make the install of the tuning pipe easier. Make sure you observe the marking you made before removing it, to have it in the same position. Do not tighten the clamps yet. Now install the remaining 5 screws for the intake manifold. Keep in mind that the manifold is plastic, so do not over tighten. Now you can tighten the clamps of the tuning pipe. Make sure there are no gaps between the tuning pipe and the manifold (the engine won't run -will start and die right away-believe me I found out the hard way).

9. Now, time to put back the TB/distributor pipe assembly. I've loaded the left rubber sleeve on the left manifold and the right one on the distributor pipe. Do not forget to preload the hose clamps...Put back the screw that holds the TB to the servo pump.
10. The last steps... connect the electrical plugs and the coolant hoses. Have fun with the Porsche hose clamps!
11. Time to put back the air box and...
12. Start the engine!!!
13. Congratulation! You did it!!

Important to have: a magnetic pick up tool and a swivel mirror to see around the corners in the engine bay along with the 5/16" ratcheting wrench.