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How to change an air mass meter

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If you are unsure of what an air mass meter (air flow meter) is or where to locate it then we suggest that you read our other article [what is an air mass meter](#).

What can go wrong with the air mass meter ?

Well, if you imagine that everytime your car is driven the vane or electrical wire inside is having air passed over it. Although this air has been filtered via the panel filter within the airbox, there will still be minute particles of dust and pollen etc. that will build up over time and reduce the air mass meters efficiency. Eventually it will stop working and this usually results in a significant affect on your cars power and its fuel economy.

It is not a part that will last forever, and although there are people that state that you can clean the internal parts, it is probably better in the long run if you just get it changed when it finally does stop working.

There was an intermittent fault on my VW Sharan (turbo diesel) whereby on occasion after a long run or having a lot of people in it, the power would disappear and the turbo was virtually non-responsive. After a while or if I switched the ignition off, the problem would go away but it kept doing this for about 6 months. I had a search around on the internet and looked in many online forums and found that the most likely cause was the air mass meter was on its way out. I had the option of giving a clean to see if this would get rid of the problem, but because of the miles this car has done I decided that this would be a waste of time and would get round to replacing it at some point or to get it changed when it finally gave up for good (whichever situation would come first).

With my VW Sharan when the air mass meter did not give any signal out to the ECU, the car would switch itself into 'limp mode'. This 'limp mode' was the cause of the lose of power and it was the ECU (cars computer) running in a mode that would minimise any damage to the engine.

For the purpose of this step-by-step article, the information below will be related to changing the air flow (air mass) meter on a VW Sharan 1.9tdi

1997. The procedure for most other cars will be very similar and just as simple.



These are typically the 2 types of air flow meter fitted to the VW sharan. On the left is the VW Bosch MAF sensor and on the right is the Pierburg MAF sensor.

What do I need ?

Don't worry, you should not need any expert mechanical tools costing a small fortune.

For changing the VW Sharan air mass meter all we need was an 8mm allen key and a pair of pliers, ooh and about 15-30 minutes of spare time.

How long did it take ?

From start to finish the job took about 15 minutes.

Changing the Sharan airmass meter was a relatively easy job.

Here are the steps for how to change your air mass meter :

On the VW Sharan, the air mass meter is situated on the left of the engine bay behind the airbox. It is bolted onto the airbox at one end with 2 x 8mm allen bolts and clamped at the other end onto a plastic air pipe with a clamping ring.



1. Unplug the wiring from the meter by squeezing the clips wings inwards and pulling up. Do not pull it by the wires.

2. We will start off by removing the plastic pipe at the back of the air mass meter.

When you push the the 2 clamping ring wings towards each other, the diameter of the clamp increases allowing you to push the pipe off the end

of the meter. With your right hand take your pliers and put them over clamping ring wings, push the pliers together and as the ring opens, separate the pipe from the meter with your left hand. You can leave the clamping ring in place around the loosened pipe.



3. The next thing to do is to unclip the top off the airbox and turn it over. This will be easy now you have removed that plastic pipe, and none of the other pipes on the airbox will need to be removed. Turning over the airbox lid at this point will make it easier to remove the 2 x 8mm allen bolts holding the meter.

There are 2 clips holding the airbox lid in place, one at the front and one at the back.

Locate one of the clips, put your hand down there and feel the bottom of the clip. If you pull the bottom of the clip upwards, it will release the top of the clip. Push the top of the released clip away from the airbox lid and repeat with the other clip.



4. Now you should have easier access to both of the bolts holding the air mass meter.

Undo the 2 x 8mm allen bolts using your 8mm allen key. Once removed make sure you put them in a safe place. The meter should now separate

from the airbox, make sure that you retrieve the large 'o' ring from the outside of that end and fit it to the new air mass meter.



5. Fitting the new air mass meter is a direct reversal of what you have just done ;
 - a. fit the old 'o' ring onto the new air mass meter
 - b. bolt the meter back onto the lid of the airbox
 - c. clip the airbox lid back on to the airbox, making sure that the panel filter is seated correctly
 - d. Connect the plastic pipe back onto the other end of the air mass meter, making sure that the clamping ring is securely in place
 - e. reconnect the wiring plug onto the top of the meter

FINISHED.

It has been suggested that the battery power should be disconnected for at least 30 minutes so that the ECU (cars computer) will reset. This will ensure that all the old ECU settings are wiped and it will then start up again using the new air mass meter readings.

This could be done at the start and remain disconnected during the new install to save time, or it could be disconnected for 30 minutes after you have finished.

Where did you get your air mass meter from ?

Ours was purchased from 'German Swedish and French' car parts. They had the item we needed on the shelf so I drove round to fetch it. This was a Pierburg air mass meter, a brand new original part - identical to the one we took off. The cost was about £75.

We were informed that if it had been a bosch item, then there would have been a £25 surcharge on top that would be refunded until we bought the old faulty one back. The reason for this is that the Bosch items are reconditioned, the internal parts are changed for new ones and these are fitted into the reconditioned bodies.

Whichever your version is, they are readily available from local motor-

factors as well as from online retailers. In fact with the online retailers you can usually get them cheaper than what we paid for ours. But we needed ours quickly and could not wait the few days for it to be delivered. Please note that there are cheaper MAF sensors available but these will most likely be pattern copies and not the original Bosch or Pierburg versions. You will have to do your own research (online) as to how reliable the copies are compared to the Bosch or Pierburg items.

TIPS

When we changed the air mass meter it did not fix the problem immediately, it eventually started to work but I was not too impressed with the fuel consumption.

It was suggested to us that what we should have done was to disconnect the power from the battery for about 30 minutes to reset the ECU after we had fitted the new meter.

After the 30 minutes, we reconnected the cars battery. The ECU then has no memory of what all the previous settings and readings were from the meters and sensors and is allowed to start from fresh and draw in all the correct relevant information.

This did the trick. All the power had returned, the throttle response was more crisp and precise and we believe that we now had a little more power than before the air mass meter failed for good. We also noticed that the fuel consumption went back up to slightly better than it was before. We were getting about 35-40mpg around town, much better than when it was running in 'limp mode', but now we are getting 40-45 mpg around town and even better at steady speeds on the motorway.

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