

How to replace Air Filter and Serpentine Belt in less than one hour on a Porsche 997.1 3.8S

How to replace your Air Filter cartridge and serpentine belt on a 997.1 3.8S engine in less than one hour.

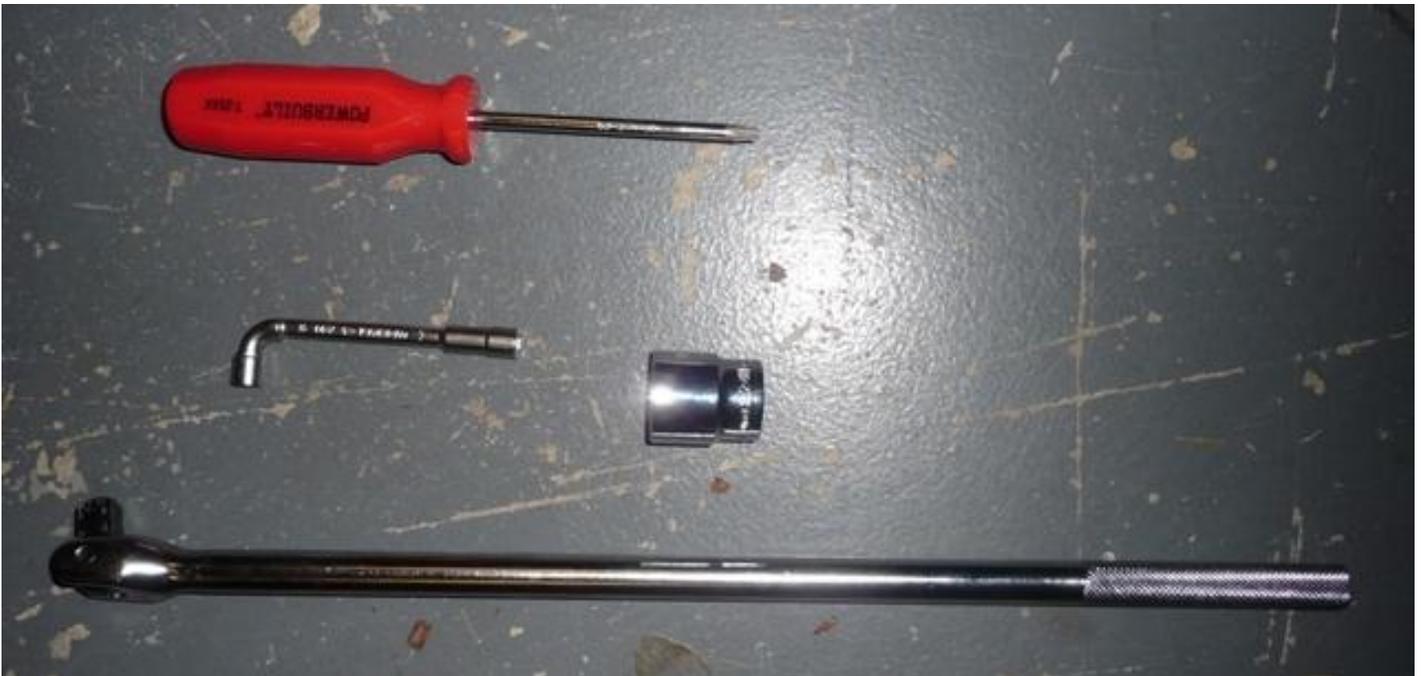
Disclaimer: This is for seasoned mechanics who knows what they are doing. If you are unsure of what you are doing, you should consult with a certified mechanic or better, a Porsche Dealer. You do everything at your own risk.

Folks,

there are probably a lot of places describing how to change the air filter and the serpentine belt on this and various forums. But when you search for it, nothing comes really easy. So, underneath, I have written an easy step by step guide that will allow you to change your air filter and serpentine belt in less than one hour (it took me 30 minutes and I was doing it for the first time).

To be successful, you will need the following tools and parts:

- Air filter element (Pelican \$21.00)
- Serpentine Belt Porsche genuine part (Suncoast or Pelican \$37.00)
- Torx screw driver T25
- 7 mm socket or wrench
- 24mm socket (1/2 inch)
- 1/2 inch break bar (18 inch long)



A-Removal of the air filter on the 3.8S engine.

1) Using the 7mm wrench, unlock the three metal collars of the rubber plenum on top of the air filter box. Push the collars inside but do not remove them. Disengage carefully the rubber hose.



2) Remove electric connectors and vacuum line from behind. There are two connectors and one vacuum line that must be carefully removed: the connectors by unlocking the plastic and metallic tabs and the vacuum line by pulling gently on the U shaped rubber hose. I am showing a picture taken from behind the air filter box to explain the process. Also, open the two cables holder (they open like a claw).



3) The filter box holds only thanks to three prongs (two underneath and one on the rear). When pulling and wiggling the box out, be very careful as to not lose the two rubber grommets located at the bottom of the box. To prevent such accident, I glued mine to the frame:



4) The engine compartment is now open. Tuck gently the two electrical wires and the vacuum line on the side:



5) When removing the air filter box, be very careful as to not damage the fine plastic film located underneath, that is used to give that great noise at mid-high RPMs. The picture below shows you where you fingers must NOT go:

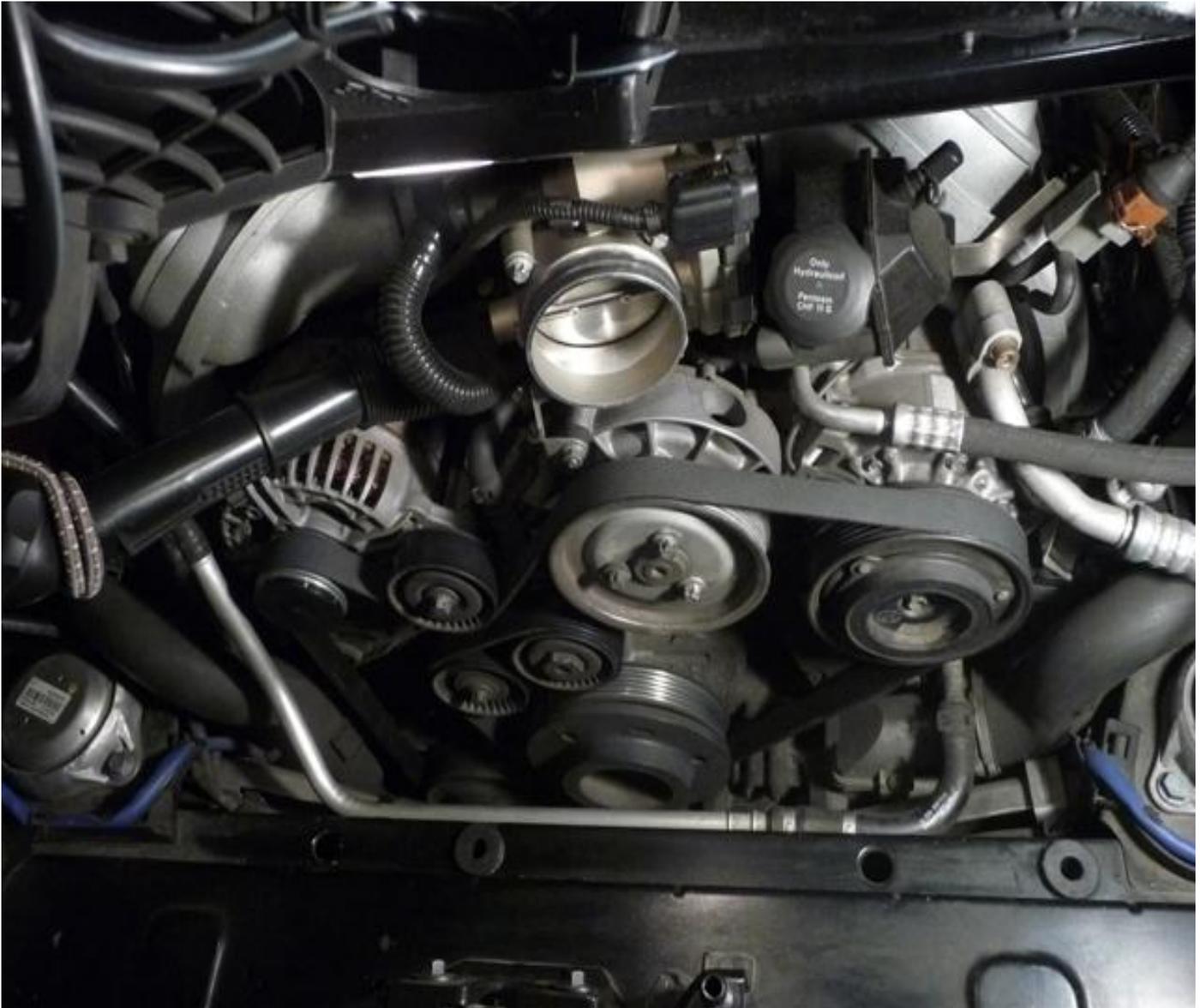


6) The air filter box can be opened with your T25 TORX screw driver. There are 8 screws to be unlocked all the way (do not remove them from the box). The filter element is easily swapped with a new one. I usually write mileage and date on the side of the filter element with a Sharpie.

7) To re-assemble, just screw the 8 T25 TORX screws in place. Leave the air filter unit aside for now.

B - Changing the serpentine belt:

1) The serpentine belt is actually quite easy to change. The picture below show the engine compartment without the air filter box, with a plain view of the belt and its circonvolutions:



Pick up your break bar and the 24 mm socket. Insert the socket as shown in the picture and position the bar to your right:



Now, using your hand, gently push on the break bar (clockwise) to move the belt tensioner closer to the pulley. Do not be afraid to push, as the hydraulic spring is quite strong.



This will give you enough room to remove the old belt from the various pulleys.

Install the new belt starting by the bottom of the engine. Some wiggling will be necessary to remove and insert the new belt, as clearances are very tight with the engine mount frame. Follow the same path (make a drawing or take a picture if unsure) with your new belt. There are multiple models of belts and I went with the genuine Porsche part which is slightly more expensive. But this is such an important part that saving money would be foolish. Plus, you will probably change it once or twice in the life of the car, so it is not worth saving \$10 or \$15 with lower quality parts.

Again, press clockwise on your bar to give you enough slack to re-install the new belt around the tensioner. Et voila.

It is now time to verify that the belt sits nicely in the grooves and pulleys, that it follows a logic and coherent path, and perhaps take time to clean up the engine and the rear compartment. A clean engine is always more pleasant and easier to maintain.

Re-insert the air filter box, but not entirely - just position it into the engine compartment. Re-assemble the plenum starting with the main hose (larger one) and insert it into the air filter box. Make sure the top hole is also covered by the plenum. Gently tighten the collar, but do not overdo it. Using a 7 mm wrench should give you more than enough torque.

Then proceed with the small hose on top of the air box filter. Tighten the clamp.

Finally, insert the air box filter in the bottom grommets (you glued them, so they are secure) and the rear insert.

Gently connect the plenum with the intake manifold on top of the engine. Tighten the clamp.

Re-connect the vacuum line to the U shaped tube (you know where to find it, now). Re-connect both electrical connectors and secure them with the two plastic claws.

Final sweep with a clean rag on top of the filter and then on your forehead (respect the order, please). Admire your work, have a beer and tell yourself that you just saved a trip to the dealer and \$400 of labors.

You just developed a special bond with your car and "she" loves you for that.

Turn the Ignition key and watch the new serpentine belt spin around the pulleys. You just did it.

Yves