

Frequently Asked Questions

Question

Particulate Filter or DPFS and EOYLS Fluid?

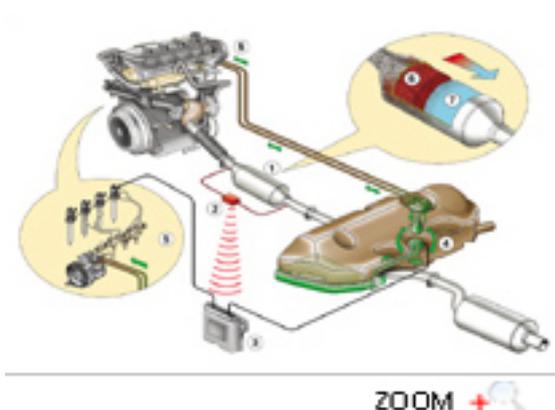
Answer

A diesel particulate filter, sometimes called a DPF, is a device designed to remove diesel particulate matter or soot from the exhaust gas of a diesel engine.

Wall Flow Diesel Particulate Filters usually remove 85% or more of the soot, and can at times (heavily loaded condition) attain soot removal efficiencies of close to 100%. **A diesel-powered vehicle equipped with functioning filter will emit no visible smoke from its exhaust pipe.**

In addition to collecting the particulate, a method must exist to clean the filter. Some filters are single use (disposable), while others are designed to burn off the accumulated particulate, either through the use of a catalyst (passive), or through an active technology, such as a fuel burner which heats the filter to soot combustion temperatures, through engine modifications (the engine is set to run a certain specific way when the filter load reaches a pre-determined level, either to heat the exhaust gases, or to produce high amounts of NO₂, which will oxidize the particulates at relatively low temperatures), or through other methods.

This is known as "filter regeneration." Fuel sulphur interferes with many "regeneration" strategies, so almost all jurisdictions that are interested in the reduction of particulate emissions, are also passing regulations governing fuel sulphur levels.



The Citroën Diesel Engine range includes a Particulate filter which traps and burns the particles produced by the engine. With the direct-injection common rail technology, the level of particle emissions from the HDi engine was already particularly low. With the PF, it drops still further to a level that is barely measurable. In this way, the engine goes well beyond the future environmental standards of the European Union.

The PF traps the particles on a filter and burns them at regular intervals.

The particles burn naturally at around 550 °C, but the initial temperature of the exhaust gases The PF modifies these two parameters through:

- * a post-injection of fuel in the expansion phase, which generates post-combustion in the cylinder and raises the temperature of the gases by 200 °C to 250 °C, to around 350 °C to 400 °C.
- * additional post-combustion generated by an oxidation catalyser placed upstream of the filter, which treats the unburned hydrocarbons from the post-injection phase. The temperature may increase by a further 100 °C, up to 450 °C or 500 °C.
- * the fuel additive Eolys fuel additive. This additive lowers the natural particle combustion temperature to 450 °C.

To lower the regeneration limit for the DPFS, Eolys, a cerine based composite, is added to the fuel which lowers the particle combustion temperature from 550 °C to 450 °C .

Cerine is used in an organic solution stored in an additional tank, located near to the fuel tank

In order to inject an amount of additive proportional to the amount of fuel injected, an additive system has been developed .

The system is made up of the following components :

A suction device

An additive injection system in the fuel tank

A specific ECU controlling the additive function

FAP is the abbreviation for the French "Filtre à particules", i.e. particle filter, and FAP is registered as a proprietary name for PSA's DPFS.

HDi - High pressure Diesel Injection.

PSA wrote ...

On many PSA models fitted with the HDi (common rail) engine it is necessary to service the particulate filter (FAP) system every 40,000 to 50,000 miles. This will be indicated via the instrument cluster in the form of a Particulate system warning.

The following components make up the FAP system:

" Control module (normally located in the cabin)

- " Particulate filter (part of the exhaust system)
- " Fluid reservoir (Integrated in the fuel tank)
- " Pump
- " Injector

The FAP system was introduced on PSA vehicles back in the year 2000 when it was developed to reduce diesel particulate levels in engine emissions through filtration.

The system operates by burning off particles caught in the filter which make up part of the exhaust system. To enable this burning off process the exhaust gas temperature must be raised to approximately 500 °C, this is achieved by changing the characteristics of the diesel before combustion by the means of an additive.

The additive is held in a separate fuel reservoir (approx 5 litres) which is connected via a pump to an injector fitted into the diesel fuel system (normally in the fuel tank).

A proportional amount of additive is injected under the control of the FAP ECU when the diesel tank is filled up, for this to be accurate the system needs to have information from the Fuel level sensor to determine what quantity to inject.

Additional Information:

Please Note: the additives used vary depending on the cars RPO number and can NOT always be mixed. More information here: - [Click Here](#) -

Owners also need to be aware that the 120,000 mile (193,000 kms) DPF change requirement is a 'notional' figure and the car itself will let you know if it is blocked. Some cars are still on the original DPF at 170,000 + miles (273,000 kms)

WARNING 'Adblue' must NOT be used in a C6 it is NOT compatible.

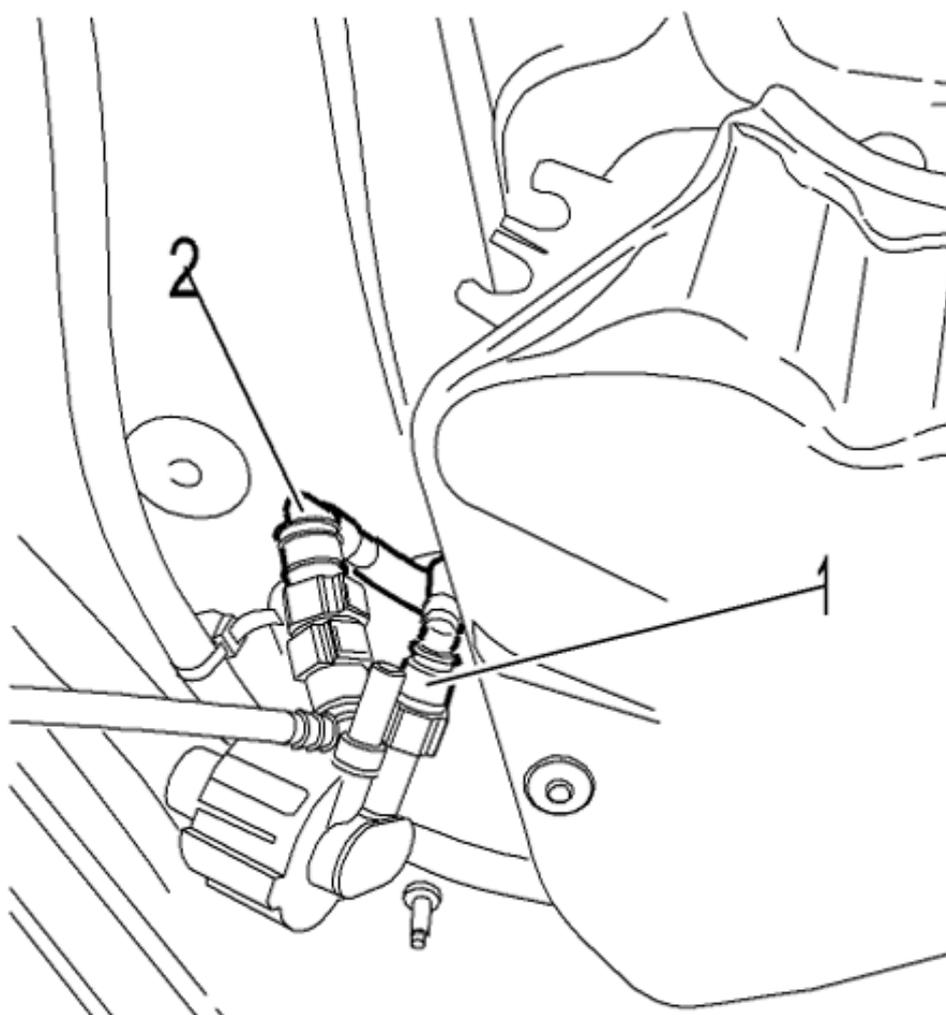
- » Green Clickfit: Eolys 176 (until stocks are exhausted)
- » Green Clickfit: Infineum F7995
- » Blue Clickfit: Rhodia Powerflex

Later additives are in a 'flexible pouch' and it is simpler to change the pouch, as they aren't designed to be re filled.

The top up cycle for additives is around 75,000 miles and DPFS Filter at 112,500 miles for a 1.6 HDi and 80,000 miles for EOLYS and 120,000 miles for the filter according to the Citroen Service Schedule

Exchange filters are available, but they carry a huge surcharge (APPROX £500+VAT) so it may be best to have your old one off ready to give to the dealer when you pick the new one up... either that or find a friendly dealer that will trust you to bring the old unit back!

Now picking a filter at random to give you an idea of price (there are a fair few options depending on chassis number and engine size etc.) but an exchange FAP filter will be anything from around £200 inc VAT - a brand new one costing in the region of £600.



Eolys Tank Location near fuel tank:

Please Note: If you refill the EOYLS fluid yourself, you will need to have the counter reset using Lexia or Proxia which may involve a payment to a Citroen Dealer.

Engine filter warning for city drivers.

6 February 2007

A WARNING has been sounded over potential problems with new-generation diesel engines.

Leasing company Lex says drivers in urban areas are at risk of the engines Exhaust Particulate Filters (EPF) clogging up. Some of the firm's drivers are having to visit a dealership every six weeks to have their filters unblocked. The problem occurs predominantly in traffic at low speed, it adds.

Lex says fleets can alleviate the potential problem by following manufacturer operating recommendations.

According to manufacturer guidelines, an EPF-equipped diesel engine is likely to clog up unless it is operated at 50mph for at least 20 minutes, or covers 50 miles at motorway speeds at least once every couple of weeks.

These driving conditions effectively burn off the soot particles that the EPF has been equipped to prevent from escaping into the atmosphere.

Drivers should look out for a warning light that notifies them that the EPF is blocked and that the car needs a run out at 50mph for a prolonged period.

Lex maintenance manager Jamie Wiseman said: If a driver knows their car is going to spend most of its time in urban areas at low speed, then it's worth avoiding a car with an EPF.

Oil dilution

A significant disadvantage associated with active regeneration is the dilution of the engine oil caused by a small amount of diesel during the post-injection cycles, where fuel is injected into the cylinder after the regular combustion. A thin layer of fuel can build up on the cylinder walls, which leads to premature engine wear, and **drivers are warned to consider shorter oil service intervals.**

There have been various studies into the engine oil dilution issue and the scale of the problem varies according to the make and model of the diesel car in question. Evidence suggests that the problem is worsened when the regeneration process is halted prematurely or when a car is used for short trips.

Tarza wrote ...

As the winter here in Finland went on and temperatures were staying continuously under -10 degrees. Mostly -15 celsius. my little french car started notifying me with the engine light and a message of faulty exhaust or something.

Well as said i got expert instructions from inside my family and i was told to run the car with relatively high speed with a low gear to begin the burn process. Apparently finnish weather has done this to many cars. It worked for a while untill it came up again. Did the same run but the light did not go away. I just let it be and was told that just wait for a while as the weather starts to warm.

It did warm up and the light went out. Has not appeared in a long time now. ... The plot thickens... I went to my local dealer to reset the computer just to get rid of all possible fault codes in the system.

It turned out that the reason why the light had come up in the first place was because of a faulty fuel cap magnet surrounding the cork. Apparently there is a sensor detecting when you refuel and the system adds the eolys additive to the fuel accordingly.

As the sensor is connected to the whole system it gave the same fault code as it would do in a case of normal fap filter fault.

So there we are.

Problem solved.

Given all the above, have a look here at PSA great description of DPFS



Details

Info 07 October 2009 by C6Dave

C6owners