Warning Messages / Information Messages for Gasoline Particle Filter (OPF): Provision of Supporting Diagnostic Information (52/25)

Model Line: **911 (992)**

Model Year: **As of 2024**

Equipment: Vehicles with gasoline particle filter

Concerns: **Gasoline particulate filter (OPF)**

Cause: **Provision of supporting diagnostic information for gasoline particle filter (OPF).**

Information

All parts of the OPF system are under permanent monitoring by the DME control unit. OPF faults can be diagnosed and are stored in the fault memory of the DME control unit.

- Perform general guided troubleshooting for relevant fault memory entries
- If fault memory entries on the ignition system or the injection system are stored in the DME control unit, **these must be checked and rectified in advance.**

Vehicle analysis logs from previous repair processes may be required for evaluation/classification of various quantities.

Action: In the event of customer complaints relating to the OPF (such as loss of power, lack of power, lack of pull, fan run-on >300 s after engine has stopped), basically always check and perform the following:

Are there any messages/displays referring to OPF, such as **white particle filter lamp?**

- Driving prompt as per the logbook for regeneration while driving **or** carry out workshop regeneration.

Are there any messages/displays referring to OPF, such as **particle filter lamp yellow?**

- Diagnosis with Porsche Tester necessary **and**, if necessary, perform workshop regeneration.

Are there any messages/displays related to the engine in general, such as **malfunction indicator light, emission control?**

- Diagnosis required to identify cause.

In case of entries in the fault memory of the DME control unit to the OPF and simultaneous message/display in the instrument cluster, check the following measured values of the DME control unit:

Fault memory entries regarding:	**"Actual values/input signals" DME control unit**	**Further diagnostics information**
Soot load level	K210: Particulate filter, load level	See: ⇒ *Technical Information 'Diagnostic information - soot load level'*
Differential pressure	K251: Particulate filter bank 1, differential pressure, current measurement	See: ⇒ *Technical Information 'Diagnostic information - differential pressure'*
	K252: Particulate filter bank 2, differential pressure, current measurement	
Soot load values	K211: Particulate filter bank 1, calculated soot load	See: ⇒ *Technical Information 'Diagnostic information - soot load values'*
	K212: Particulate filter bank 2, calculated soot load	
	K221: Particulate filter bank 1, measured soot load	
	K222: Particulate filter bank 2, measured soot load	
Oil ash load	K231: Particulate filter bank 1, measured oil ash load	See: ⇒ *Technical Information 'Diagnostic information - oil ash load'*
	K232: Particulate filter bank 2, measured oil ash load	

Diagnostic information - soot load level

Information: Read out current load level and evaluate accordingly.
There are a total of seven load levels of the OPF from "0" to "6".
The following "**Restrictions in vehicle operation**" specified may differ depending on the model and model year.

Load levels	**Information/warning message**	**Restrictions in vehicle operation**	**Evaluation/action**
0 - 1	None	▪ Shorter thrust phase	Load levels 0 to 3 are generally not perceptible to the customer.
2	None	▪ Shorter thrust phase ▪ Coasting ban	
3	None	▪ Shorter thrust phase ▪ Coasting ban ▪ Change in switching behavior	

4	White/yellow particle filter lamp **and** Information message "Check particle filter" in the instrument cluster	▪ Shorter thrust phase ▪ Coasting ban ▪ Change in switching behavior ▪ Increase in idle speed ▪ Start/Stop ban	Regeneration while driving **or** carry out workshop regeneration.
5	Yellow malfunction indicator light in conjunction with general fault reporting **and** "Particle filter" warning message in the instrument cluster. Fault memory entry: **"P246300"**	▪ Thrust phase ban ▪ Coasting ban ▪ Change in switching behavior ▪ Increase in idle speed ▪ Start/Stop ban ▪ Reduction in engine power	Perform workshop regeneration.
6	Yellow malfunction indicator light in conjunction with general fault reporting **and** "Particle filter" warning message in the instrument cluster. Fault memory entry: **"P24A400"**	▪ Thrust phase ban ▪ Coasting ban ▪ Change in switching behavior ▪ Reduction in engine power	Replace gasoline particle filter.

Diagnostic information - differential pressure

Information

Different differential pressures are possible and plausible between the cylinder banks; **this does not allow any conclusions to be drawn about OPF damage.**

Information: With **intact OPF**, the differential pressure values are between **0.01 hPa - 100 hPa** during operation.

If a differential pressure value is measured **outside the specified range**, in conjunction with a soot load level "greater than 4", perform the following steps:

- Visual inspection of differential pressure lines, such as tightness, damage in general and in particular to sensor connections, kinks, correct pressure line connection before and after OPF
- Review differential pressure lines for continuity and blockage
- Visual inspection of electrical signal lines
- Inspection of the electrical plug connection on the differential pressure sensor, e.g. seat and corrosion
- If necessary, perform differential pressure sensor cross exchange and review signal again
- Replace differential pressure sensor if necessary and, if necessary, perform workshop regeneration and delete fault memory

Diagnostic information - soot load values

Information

Different soot load values (measured and calculated) are possible and plausible between the cylinder banks; **this does not allow any conclusion to be drawn about OPF damage.**

When comparing the level difference between calculated and measured soot load, the calculation value is always greater than the measured value of a cylinder bank when OPF is intact.

Information: The values of the calculated and measured soot load must be considered if the load level "less than 4" and nevertheless an error message of the OPF is set.

Proceed as follows for the evaluation:

1 Compare measured soot load values and calculated soot load per cylinder bank.
Cylinder bank 1 measured using cylinder bank 1 calculated, cylinder bank 2 analogous.

If the measured soot load is above the calculated soot load, the fuel system must be examined for faults in parallel and repaired if necessary.

2 Thereafter, perform workshop regeneration using the PIWIS Tester and delete fault memory.

Diagnostic information - oil ash load

Information

Oil ash in the OPF cannot be regenerated.

It is possible that, for example, when the measurement is okay in vehicle operation, the oil ash load falls from 99% to 20%; **this does not allow any conclusion to be drawn about OPF damage.**

The actual value **"particle filter bank X, oil ash load calculated"** for oil load is **not relevant and must not be used for diagnosis.**

Information: The measured oil ash load is determined every 1000 km (621 miles) via the differential pressures and can vary.
Where a value is 100%, the error code **P242F "ash mass too high"** is stored.

Oil loads accumulate during the combustion process, the quantity depends on the ash content in the engine oil and the oil consumption.
Make sure the correct engine oil is used.

High oil ash load can be caused by excessive **oil combustion**, among other things.

After diagnosis and repair of excessive oil combustion, both OPFs must be replaced; **an exchange of individual OPFs in banks is not permitted here.**
(**Exception**, cause can only be assigned to a bank e.g. defective oil separator)
After replacing the OPFs, an oil change to the correct engine oil is also required.