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TECHNICAL REPORT

Turbocharger lubrication
system kit OPK00010



PURPOSE

To report to our customers about the new mounting **kit and replacement of charger's lubrication system** in 1.6 HDI engines from PSA group.



AJUSA REFERENCE **OPK00010**

DESCRIPTION

This kit fits most common **1.6 HDI engines of PSA** group. This type of engines has a trend to generate remains of cinder and soot which end up mixing with oil.

One of the main reasons is **leak of gases through of copper washers** where injectors are seated. This happens since copper washers are in charge of preventing burned gases which are inside cylinders from arriving at the top of the cylinder head where we have oil that lubricates camshafts and lifters.

The cause of gas leaks in this area is not the washer itself, but the **load relaxation generated** by the bolts that hold the injector to the cylinder head. The way to diagnose if this is happening is to listen to see if there are **fring blanks** in that area.



Fire path that is produced for leak of gases in the engine of our vehicle

To avoid this polluted oil to go into the turbocharger and other components, there are some filters in the engine.

01. One of them would be **inside the oil vacuum** pipe in the sump.
02. Other one would be in the **fitting screw** between the turbocharger oil pipe and block.
03. The own **oil filter** itself.



01



02



03

However, with the passage of the kilometers these **filters end up clogging** and reduce the flow to the point of completely blocking the oil flow to the turbo, which generates a **lubrication deficiency** and failure due to wear in components such as the turbo, camshafts, cam, etc.

If we add to this that the life of the oil is repeatedly lengthened and the engine runs at a low level, the problem is aggravated by having a higher proportion of deposits in it.

When the turbocharger is replaced, it is recommended to **check the cylinder head cover and sump** and to clean in case of finding remains of soot inside them. It is also recommended to clean the oil filter in case of finding remains of soot on it.

Other components where we can find remains of soot and cinder are in the **oil pipes of turbocharger**, both feed and drain. These remains of soot are seated in the internal walls of these pipes reducing their section and flow.

When turbocharger is replaced due to failure by wear, it is **fully necessary to follow the above mentioned steps** and to replace the components included in our kit to ensure a completely and enduring repair.

KIT COMPOSITION

01. Oil-filter vacuum pipe + pump gasket + bolts
02. Oil feed pipe + inlet and outlet fittings + copper washers of fuel injectors
03. Oil drain pipe to sump + grip + turbocharger gasket
04. Gasket from turbocharger to exhaust manifold



ASSEMBLY

To get a full turbocharger repair and reduce the risk of early new turbocharger failure, **it would be necessary to follow next steps:**

01. Turbocharger oil feed pipe & **banjo bolts** must be replaced.

Banjo bolts to turbocharger torque: 20 N.m | Banjo bolts to block torque: 30 N.m

02. Oil pump should be removed and checked.

Bolts torque:

- 1) 5 Nm
- 2) 9 Nm

03. Sump must be removed and cleaned. Apply sealant (Ajusil on the sump to create the gasket.

Torque: 12 Nm.

04. Check that engine has latest specification sump and dipstick.

05. **Oil strainer** (vacuum) must be removed and replaced due to residual carbon/sludge build up.

06. **Oil cooler and filter assembly** should be removed and cleaned.

07. **Intercooler** must be removed, cleaned thoroughly and any oil inside drained.

08. Feed and drain hoses to be checked for damage and cleaned.

09. Vacuum pump must be removed and checked for debris/carbon. Clean if necessary.

10. New **oil filter** and **oil** must be fitted. Recommended oils: Synthetic 5W-30 | OEM PSA B71 2312 5W-30 = PSA B71 2290.

11. Fuel injector washers must be checked and if burnt, replace them if necessary. Also replace oil seals and bolts of injectors grip bolts.

Injector/grip torque: 5 Nm + 65°±5° | Banjo bolts of turbocharger pipes torque:

- 1) 20 Nm
- 2) 25 Nm

12. Oil drain pipe must be checked for blockage/restrictions and cleaned if necessary.

Torque: 9 Nm.

13. **Oil flow** and **pressure** must be checked (1,3 bar a 1000 rpm).

Do you have any doubt ? **Contact us!**



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