

This new version replaces all previous versions. Please replace SI-110520

WARNING! INCREASED REPAIR EFFORT!

IMPORTANT INFORMATION!

NONCOMPLIANCE WILL LEAD TO THE EXCLUSION OF WARRANTY!!

Strong carbon deposition and metal abrasion in the oil lead to increased turbocharger damages on these 1.6 HDI engines.

These deficiencies can only be fixed with an extensive repair!!!

→ Time for the repair: approx. 10 hours!!!

If repairing this damage for the first time using the relevant **SUPERKIT is mandatory! This is a complete kit for repairing and cleaning the engine. This way the reason for the damage can be fixed completely!**

Failure of turbocharger, weak performance, loud noises, heavy smoke development, oil leakages, increased bearing clearance

Strong carbon deposition and metal abrasion in the oil cause increased bearing damages on turbochargers on these engines. The deposition of carbonised oil leads to a different oil viscosity and flowability. As a consequence, parts in the oil cycle such as the hydraulic lifter are influenced negatively and may not work correctly anymore. Leakages around the injection nozzle seals lead to exhaust gases blowing into the cylinder head.

The depositions cause the filter in the hollow screw to clog up and thus the oil supply of the turbocharger is interrupted. This leads to massive bearing damages which can be detected from the outside through the thermal heat tinting on the center section (blue in color) or by the increased bearing clearance or the missing or loose shaft nut.

Necessary measures to repair the turbocharger:

- Drain the old engine oil, fill the engine with new oil, use a new oil filter and engine cleaner in addition. Please decide after reviewing the damage if rinsing the engine with the defective turbocharger still makes sense. Rinse the engine according to the instructions of the cleaner and drain the oil again..
- Disconnect the battery (please wait 15 minutes if necessary, please also follow the vehicle manufacturer's instructions).
- Remove the air filter, check for foreign bodies and exchange it, clean the air filter housing and the connected hoses
- Remove the air suction from the airfilter to the turbocharger, check it for foreign bodies / carbonised oil, clean it thoroughly or exchange it if necessary.
- Remove the crankcase ventilation as well as the pipe of the crankcase ventilation, check it for foreign bodies, clean it or exchange it if necessary.
- Dismount the turbocharger
 - dismantle the heat shield / noise insulation, exchange if necessary
 - dismantle the oil drain pipe and exchange it
 - loosen the bracket holding the turbocharger
 - remove and exchange the nuts on the exhaust manifold
- Disconnect the vacuum pump of the break system, check it for foreign bodies / metal abrasion / carbonized oil, clean it thoroughly or exchange it if necessary.
- **Dismount the valve cover and the camshaft box, also dismount fuel injector rails, injection nozzles, exhaust manifold, timing belt and auxiliary drive.**
- **Suck off oil residue clean the cylinder head thoroughly, suck off remaining residue.**
 - **Dismount and exchange the hydraulic lifters**
 - **Check the injection nozzles (sealing!), clean and exchange the seals (sealing ring cylinder head!).**
 - **Clean the exhaust manifold thoroughly, check for correct function, exchange if necessary, exchange sealing rings**

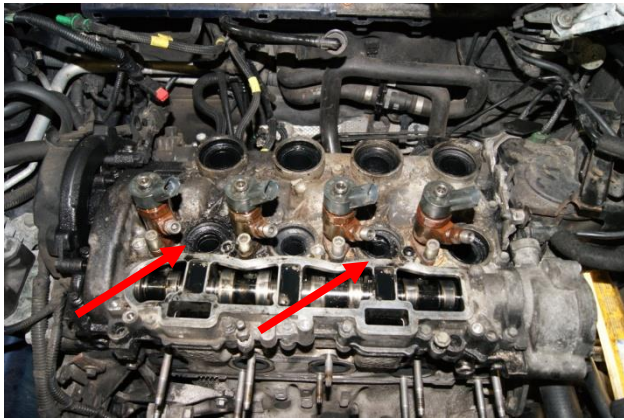


Bild 1: Re-seal the gas leakages on the exhaust manifold



Bild 2: Re-seal the leaking holding bracket of the injection nozzle



Bild 3: Left: hydraulic lifter is extended to the maximum, seal valves. Do not replace lifters!

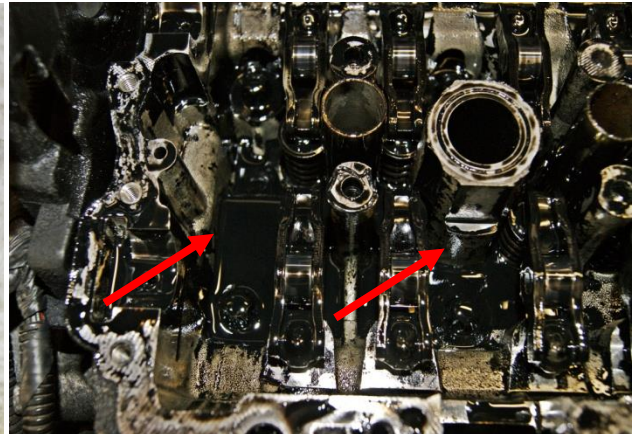


Bild 4: The oil remains in the cylinder head and develops into gel – **suck it out!** Remove all residue from the suction channels

- Dismount the oil filter and exchange it.
- Dismount the oil cooler / oil filter unit, check it for foreign bodies and metal abrasion and clean it thoroughly or exchange it if necessary.
- Dismount and clean the oil pan.
- Dismont oil suction pipe with the filter and replace it.
- Dismount and clean oil pump, dismount and clean overpressure valve, clean channels of the oil pump, when remounting please glue the screws to the cover with Loctite or the like. (If any increased wear can be seen, the oil pump has to be exchanged!)
- Fill the engine with engine oil.
- Install the timing belt with tensioner pulley. Check the timing belt **according to manufacturer instructions** and exchange if necessary
- Exchange water pump if necessary
- Dismount catalytic converter and particle filter unit, check for foreign bodies / carbonised oil and exchange if necessary.
- Only on vehicles with DPF
 - Loosen cooler
 - Dismount the fan motor and casing of the cooler.
- Dismount the intercooler, clean it, exchange it if necessary.

Reassemble the parts in reverse order and also adhere to the following:

- Exchange the oil-level dip-stick if it has a yellow handle. It will be replaced by a dip-stick made of white composite material with an orange colored handle. The measurements with the new dip-stick are much more accurate.
- Remove the filter or strainer from the hollow screw of the turbocharger oil inlet pipe.
- Check the outlet line of the air duct for any damages and exchange it if necessary. Especially on vehicles built before 05/2006, cracks may occur.
- Please prevent the ring connection from being twisted when reinstalling the oil inlet pipe.
- **Check the oil amount flowing through** the turbocharger after installing the new parts.
Ensure that the oil amount is not below the minimum oil amount for the engine.
- Mount a longer oil outlet line to the turbocharger and lead it to a separate collecting container.
- Start the engine in neutral gear. Turn the engine off after 60 seconds and check the oil volume in the container. At least 0.5 l of oil should have flown into the container.

- Repeat the test 2-3 times, to make sure that the oil flow is correct. If this test is negative, the engine has to be exchanged because the oil channels are already irreversibly damaged.
- Install the correct oil outlet pipe again.
- Vehicles with diesel particle filter: Proceed with a static regeneration of the DPF. Please pay attention to manufacturer's instructions.
- Test drive the vehicle for approx. 30-40 km.
- Exchange engine oil and oil filter once again.

If the listed parts are not exchanged, the turbocharger will most likely fail again and any warranty claims will be excluded. If you have any questions or problems, please feel free to call the BTS-Hotline directly.

Content Superkit

Description	Qty
turbocharger	1
Oil inlet pipe	1
Oil outlet pipe	1
Hollow screw with filter	1
Hollow screw	1
Mounting kit	1
Oil suction pipe	1
Gasket vacuum pump	1
Clamp catalytic converter	1
Gasket – oil cooler /oil filter unit	1
Valve cover gasket	1
Camshaft sealing ring	1
Gasket for oil filter housing (backside)	1
Gasket for oil filter housing (frontside)	1
Stud M7	8
Hexagon nut	8
Sealing ring for cover of suction 29,5mm	4
Sealing ring for cover of suction 35 mm	4
Hydraulic lifter	16
Injection gasket (upper side)	4
Support plate for sealing ring on injection nozzle	4
Heat insulation for sealing ring on injection nozzle	4
Copper sealing ring on injection	4
Hose oil outlet	1
Hose clamp for oil outlet	2
Sealing agent oil pump	1
Gasket oil pump	1
Oil seal oil pump	1
Engine cleaning cleaner	1

The following parts are also necessary as needed

Description	Qty
Oil filling	3
Oil filter	3
Oil level dip-stick with orange handle	1
Timing belt kit	1
Water pump	1
Vacuum pump	1
Air filter	1
Crankcase ventilation with hose	1
Oil pump	1
Suction pipes	je 1
Intercooler	1
Particle filter	1
Oil cooler / oil filter unit	1

Vehicle manufacturer: PSA engines 1.6 HDI; 66kW/80kW

Vehicles: Citroen Berlingo, C2, C3, C4, C5, Xsara; Ford Focus, Fusion, Fiesta V; Peugeot 206, 207, 307, 308,407, 1007, 3008, Partner; Mini Clubman; Mazda 3; Volvo S40II, V50, C30. **Engine code:** 9HX/ 9HY/ 9HZ/ HHDA/ HHJA/ HHDB/ HHJB/ G8DA/ G8DB/ D4164T/ Y601/ DV6TED4/ DV6ATED4

Validity

This Service Information is valid for the exchange of the following turbocharger:

BTS reference: T914333

Manufacturer reference: 740821-/ 750030-/ 753420-/ (GARRETT); **OE-no.:** Ford: 1340133, 1479055; Peugeot/Citroen: 9654128780, 9657571880, 9660641380, 9663199280, 0375J6, 0375J8, 0375J3, 0375N1, 0375N9, 9657248680, 9650764480, 9651839880, 9656125880, Mini: 11657804903, Mazda: Y60113700, Y60113700E, Y60113700F, Y60113700D, Y60113700C, Y60113700B, Y60113700A, Y60113700G.

BTS-no.: T914565

Manufacturer no.: 49173-07502, 49173-07503, 49173-07504, 49173-07506, 49173-07507, 49173-07517, 49173-07527 (MHI); **OE-no.:** Ford: 1479841, 1523337; Peugeot/Citroen: 9657603780, 9657530580, 9662371080, 9682881780, 9682881380, 0375K5, 0375N5, 0375J0, 0375Q4, 0375Q5.

This Service Information is also valid for the exchange of the following turbocharger:

BTS reference: T914565

Manufacturer reference: 49173-07502, 49173-07503, 49173-07504, 49173-07506, 49173-07507, 49173-07517, 49173-07527 (MHI); **OE no.:** Ford: 1479841, 1523337; Peugeot/Citroen: 9657603780, 9657530580, 9662371080, 9682881780, 9682881380, 0375K5, 0375N5, 0375J0, 0375Q4, 0375Q5.

The manufacturers' guidelines shall be adhered to.