

This new version replaces all previous versions. Please replace SI-150721

## Turbocharger failure, whistling noises and lack of performance

### Please note:

We have noticed more and more damages on the axial bearings of this turbocharger!

The axial bearing clearance increases so much that the turbine wheel axially grinds on the heat shield.

Generally, the radial bearing is only damaged slightly. Squeaking noises may occur when accelerating.

Please check the DPF for not processed or cancelled regeneration processes. This damage is a result of the pressure ratio in the exhaust and air systems being out of the normal range.

### Exhaust side:

The exhaust gas back pressure after the turbocharger is too high. The proper max. value is **300 mbar** on the manometer. Please don't check the pressure manually and not with the OBD. The testing pipes on the DPS as well as the sensors are often blocked and contain condensed water. Therefore, the measurements may not be correct. Please check if the differential pressure sensor is working correctly and clean the test pipe. Check if the differential pressure sensor is working correctly, clean the testing pipes (blow clean); put the T-piece in front of the DPF and check the exhaust gas back pressure when driving. The exhaust gas back pressure may not exceed **300 mbar** in any rpm-range when operated under operating temperature and normal working conditions.

### Compressor side:

The air inlet pipe is constricted, the turbocharger does not receive enough air!

The air filter is dirty or wet; the air-mass sensor may be dirty.

### Crankcase ventilation is not working correctly:

Filter in crankcase ventilation is sticky and clogged. Consequential damages turbine side oil loss in VTG unit with carbonization, compressor side oil entry into the intercooler and external oil disposition from the valve cover vent into the intake region. The measured maximum value of **5 mbar** in the crankcase may not be exceeded. This can be easily measured with a hose leveling instrument. (**BTS diagnostic tool MESS01**).



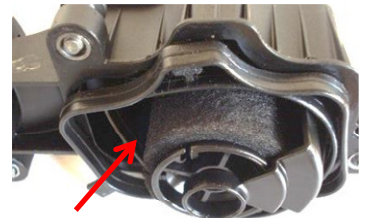
Tinted thrust washer due to axial thrust



Abrased back panel on turbine wheel - causes noises



Oil mist in compressor housing



Oil mist separator is blocked, should be exchanged every 45 Tkm (this is the old version)

**Vehicle Manufacturer:** BMW

**Vehicle:** (E81) 120 d, (E90) 320 d, (E91) 320 d, (E87) 120 d

**Engine Code:** M47D20 (204D4)

**Validity:** This service information is valid for the exchange of the turbocharger with

**BTS reference:** T914071; **BTS Turbo Service Set-reference:** T981042;

**manufacturer reference:** 49135-05610, 49135-05620, 49135-05630, 49135-05640, 49135-05641, 49135-05650, 49135-05651, 49135-05660, 49135-05670, 49135-05671, 49E90-35209, 49S35-05671; **OE reference:** 11657795499, 11657795498, 11654716166, 7795499, 7795498, 4716166

**OE-references are only for means of comparison.**

**The content of this Service Information is non-binding and is only for informational purposes.**

**The manufacturer specifications have to be adhered to.**