FOREIGN OBJECT DAMAGE

What is foreign object damage?

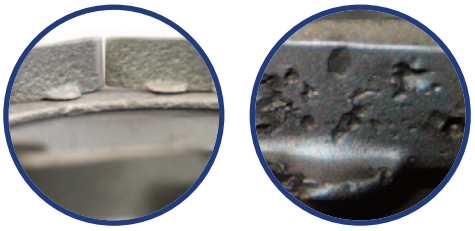
A foreign object is simply any object that enters the turbocharger through the air inlet or exhaust inlet. When a foreign object enters the turbocharger, its performance will be affected.

Causes of foreign object damage:

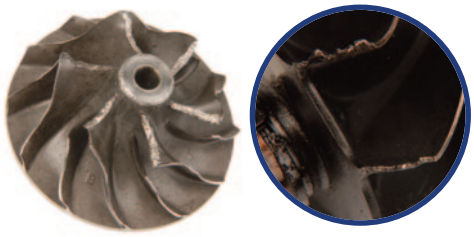
- Small particles entering through damaged hoses
- If the air filter is damaged (or faulty), of a low quality, or missing, objects will be sucked into the air intake
- Debris from a previous turbocharger failure
- Broken engine components, e.g. valves or fragments of damaged piston, injector tips
- Bolts, nuts, washers, rags or other items left in the intake pipe during servicing
- Particles in the exhaust gas e.g. coke from poor combustion
- Ice in low temperature conditions

Signs of foreign object damage:

- Noise from the turbo during operation
- Loss of performance
- Damage to the compressor or turbine blades
- Pitting around the compressor inlet
- Damage to the compressor or turbine blades



Pitting on the VNT blades



Damage to inducer of turbine wheel

Preventing turbo failure caused by foreign object damage:

- Make sure air hoses are clear from blockages and other loose objects
- Check that air hoses are intact and in good working condition
- Ensure the air filter is the correct one for the vehicle
- Ensure no debris or engine fragments remain from the previous turbo failure
- Using new gaskets helps to prevent the possibility of gasket break up and ensure a perfect seal
- Avoid operating the vehicle without the air intake connected to the turbocharger, as rags and other workshop items can be sucked into the intake system

TECH TIP - Never continue to operate a turbocharger with damaged blades as the rotor balance will be affected and this could impact its service life. **Always** replace or fully clean intake pipes and check for debris before fitting replacement turbo.

For further information on this or other topics, visit www.melett.com/technical / technicalsupport@melett.com

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