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PRECISION ENGINEERED
TURBOCHARGERS & PARTS

OVERHEATING

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What is overheating?

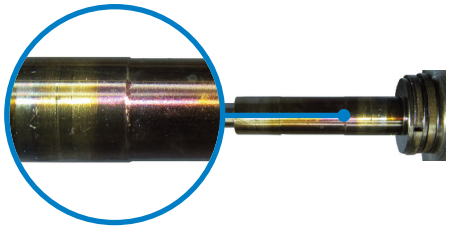
Overheating is a term used to describe components that have been subjected to abnormally high exhaust temperature or insufficient cooling.

Causes of overheating:

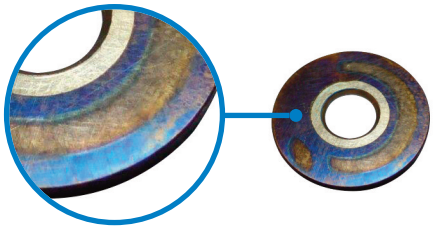
- Hot shut down
- DPF issues, such as regeneration, resulting in increased exhaust gas pressure and temperatures which leads to overheating of the turbine side of the turbocharger
- Remapping, chipping or over-fuelling

Signs of overheating:

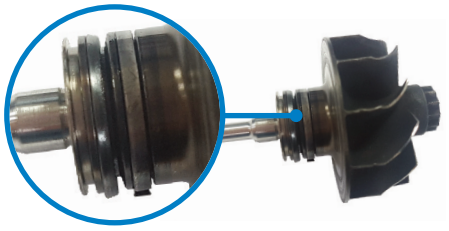
- Discolouration at the hot end of the turbine wheel, spreading along journal bearing area
- "Heat soak" from the turbine side of the turbocharger through to the compressor side, causing discolouration to the turbine shaft and bearing housing
- Discolouration of internal components including thrust washer and flinger; occasionally without evidence of wear
- Collapse (loss of tension) to turbine end piston ring
- Carbon build up in the oil feeds and piston ring area
- Abnormal, excess wear to turbine end piston ring and groove
- Turbine blades appearance being uniformly curved downwards
- Small sections or edges of the turbine blades being fractured/partial loss of blades



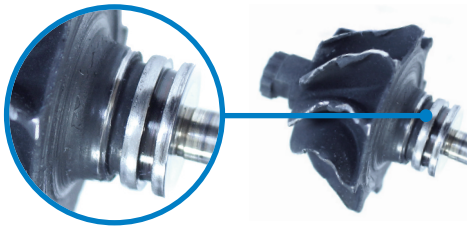
Discolouration of shaft



Discolouration of internal parts



Excess wear to turbine end piston ring and groove



Excess wear to turbine end piston ring and groove

Prevention:

- Check the DPF is in good working condition
- Ensure there are no leaks in the cooling lines
- Give the turbocharger time to cool, particularly after long journeys or harsh driving conditions

TECH TIP - Overheating can often lead to insufficient lubrication due to excessive heat at the turbine end and/or carbonisation of oil within the oil feeds.

For further information on this or other topics, visit **www.melett.com/technical** or contact our Technical team via **mel_techsupport@wabtec.com**

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