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PRECISION ENGINEERED
TURBOCHARGERS & PARTS

LACK OF LUBRICATION /OIL STARVATION

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What is lack of lubrication and oil starvation?

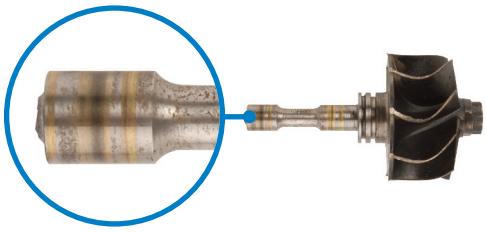
If there is a lack of lubrication within the turbocharger the consequences can be severe. This is one of the most common reasons for failure, a lack of oil in any of the lubricated areas can cause premature failure.

Causes of lack of lubrication and oil starvation:

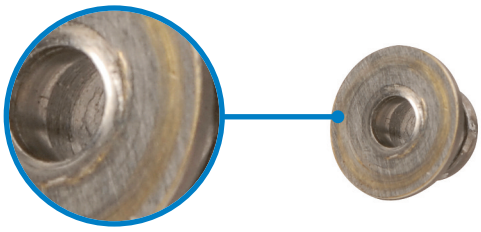
- Poor oil filter maintenance
- Insufficient oil in the sump
- Incorrect oil inlet gasket used leading to restriction in oil supply
- Build-up (coking) / carbon deposits in the oil feed pipe
- Applying silicone to the oil inlet gasket causing blockages
- Sludge or coke build up in bearing housing from hot shutdowns
- A damaged, blocked or low-quality oil filter
- Failure to prime the turbo with oil before initial run
- Damaged/Bent oil feed pipe
- Damaged or worn oil pump
- Incorrect grade of oil is used

Signs of lack of lubrication and oil starvation:

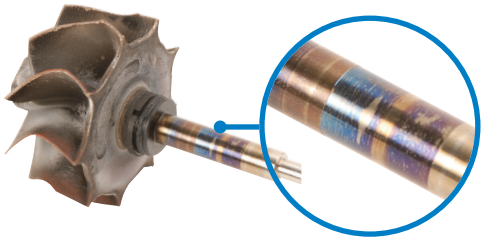
- Material transfer to the thrust parts and the journal bearing diameter of the shaft and wheel
- Discolouration to the thrust parts and the journal bearing diameter of the shaft and wheel
- Excessive wear to the thrust pads of the thrust bearing
- Excessive wear to the journal bearings



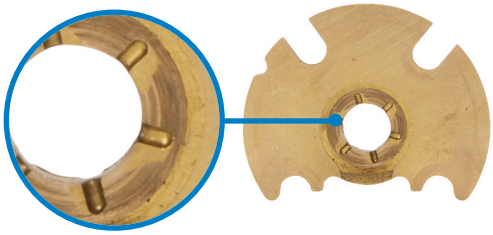
Material transfer from journal bearing



Material transfer from thrust bearing



Discolourartion to diameter of shaft & wheel



Excessive wear to thrust bearing

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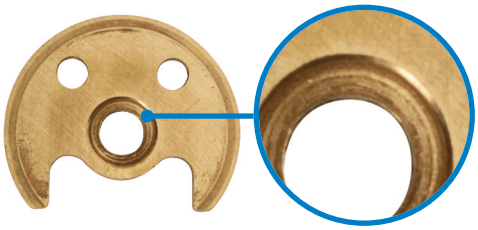
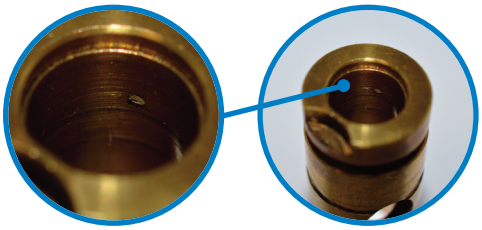


Excessive wear to thust bearing



Excessive wear to journal bearing

Preventing turbo failure caused by lack of lubrication and oil starvation:

- Oil supply is critical to the turbo, please ensure the oil flow is correct
- Always remember to prime the replacement turbocharger with oil before fitting
- Do not use silicone on oil gaskets as it can easily become detached and block oil passages
- Clean or replace oil inlet pipes to remove carbon deposits or sludge that could restrict oil flow to the bearing systems
- Use fresh oil and new oil filters (which have been recommended by the engine manufacturer) when fitting a replacement turbocharger
- Allow time for the engine to warm up at the start of each journey and cool down at the end

TECH TIP - If the original cause of failure is not identified it is likely the same type of failure will occur on the remanufactured turbo. A lack of lubrication can result in catastrophic damage to the bearing systems which can occur within seconds of the turbocharger commencing operation.

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