LACK OF LUBRICATION OIL STARVATION

What is lack of lubrication and oil starvation?

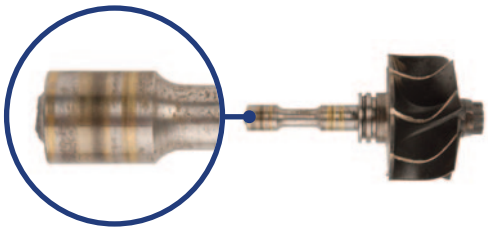
If there is a lack of lubrication within the turbocharger the consequences can be severe. This is one of the most common reasons for failure, a lack of oil in any of the lubricated areas can cause premature failure.

Causes of lack of lubrication and oil starvation:

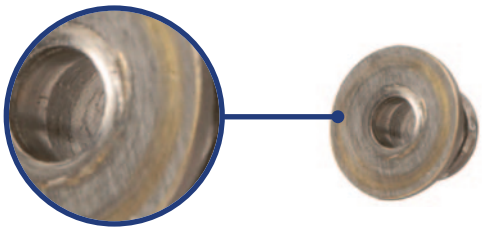
- Poor oil filter maintenance
- Insufficient oil in the sump
- Incorrect oil inlet gasket used leading to restriction in oil supply
- Build-up (coking) / carbon deposits in the oil feed pipe
- Applying silicone to the oil inlet gasket causing blockages
- Sludge or coke build up in bearing housing from 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:

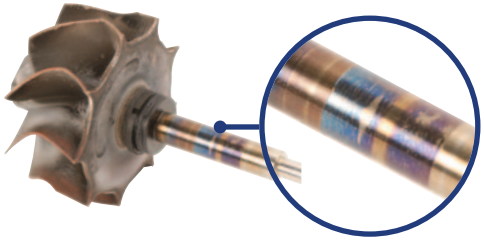
- Material transfer to the thrust parts and the journal bearing diameter of the shaft and wheel
- Discolouration to the thrust parts and the journal bearing diameter of the shaft and wheel
- Excessive wear to the thrust pads of the thrust bearing
- Excessive wear to the journal bearings



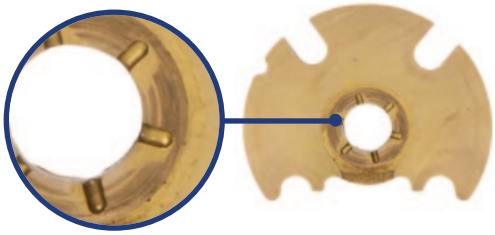
Material transfer from journal bearing



Material transfer from thrust bearing



Discolourartion to diameter of shaft & wheel



Excessive wear to thrust bearing

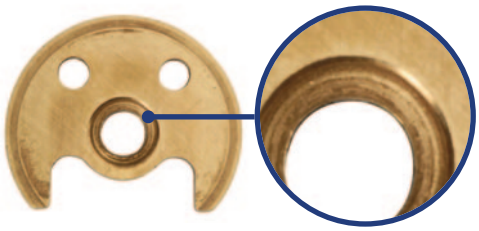
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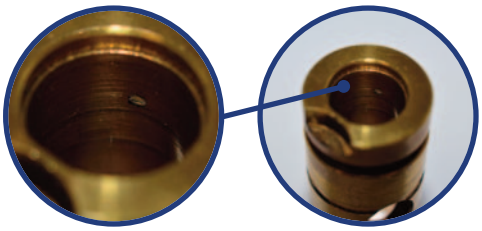
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Signs of lack of lubrication and oil starvation:



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.

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

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