

# TURBO FAILURE: OIL STARVATION

FACT  
SHEET

# 4

- **Turbochargers are very reliable: less than 1% of turbos fail due to a manufacturing fault with the turbo itself.**
- **95% of turbo failures are because of problems with oil starvation, oil contamination or foreign object damage.**

**BEFORE YOU FIT A NEW TURBO, FIND OUT WHAT CAUSED THE FIRST UNIT TO FAIL OR YOU RISK THE REPLACEMENT FAILING TOO.**

## Why does oil starvation damage turbos?

As turbochargers can operate at over 240,000 rpm and endure temperatures of 950°C, turbo bearings are under great stress. The turbine shaft and bearings rotate in a thin film of oil. If oil is not present at start-up and while the turbo is running, the bearings will fail. Running a turbo without oil for five seconds is as harmful as running an engine without oil for five minutes.

While it is important to check the engine oil pressure meets the manufacturer's specifications, it is even more critical that the oil feed pipes to turbo are clear and clean, so you are certain they can supply oil at the correct pressure.

### What causes oil starvation?

- Low engine oil level in the sump.
- A bent or kinked oil feed pipe.
- Carbon deposits (coking) in the oil feed pipe.
- Blockage caused by applying silicone to the oil inlet gasket.
- Incorrect oil inlet gasket restricting oil supply.
- A blocked, damaged or poor quality oil filter.
- Worn oil pump.
- Failure to prime the replacement turbo with oil during fitting.
- The engine not being used for long periods, particularly in cold weather.

### Preventing turbo failure caused by oil starvation

- Do not use silicone on oil gaskets; it can easily become detached and block oil passages.
- Clean or replace oil inlet pipes to eliminate any carbon deposits or sludge that could restrict oil flow to the bearings.
- It is important to check the oil pressure and oil supply to the turbo.
- Always use fresh oil and new oil filters as recommended by the engine manufacturer when fitting a new turbo.

**BTN Turbo supplies brand new replacement turbochargers, made by the original manufacturers to the highest quality standards. Though we confidently guarantee them, our standard warranty does not cover turbocharger failure caused by oil starvation.**

This is one of a series of Turbo Failure Fact Sheets from BTN Turbo.

**Safeguard your reputation and your business – make sure you read them all.**

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Extreme heat damage due to lack of oil



The blue colouring indicates excessive temperatures



Scored and discoloured surface due to insufficient oil



The Turbocharger People