

- **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 contamination 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. Consequently any fault with the oil supply to the turbo means its bearings are likely to fail before the engine's main bearings. 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 the turbo are clean and clear, so you are certain they can supply uncontaminated oil, at the correct pressure. Contaminated or dirty oil will scratch or score the bearings, leading to rapid wear and ultimately, turbocharger failure.

What causes contaminated oil?

- A blocked, damaged or poor quality oil filter.
- High carbon build-up in the engine. This can rapidly contaminate even new oil.
- Accidental contamination of new oil during servicing.
- A malfunctioning oil filter bypass valve.
- Engine wear, leaving swarf deposits in the oil.
- Oil that has degraded due to excessive temperatures or extended service intervals

Preventing turbo failure caused by contaminated oil

- Always use fresh oil and new oil filters as recommended by the engine manufacturer when fitting a new turbo.
- Ensure the oil is the correct grade for the engine.
- Clean or replace oil inlet pipes to eliminate any carbon deposits or sludge that could enter the turbo or restrict oil flow to the bearings

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 contamination.

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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This marking is evidence of contaminated oil



Severe scoring on to the journal bearings



Extreme wear on the turbine shaft



The Turbocharger People