



## Turbo Failure: Foreign Object Damage

**Foreign object damage is caused by foreign materials entering the turbine/compressor housing and impacting the turbine or compressor wheel.**

This leads to a loss of efficiency and imbalance in shaft rotation, ultimately resulting in turbo failure, causing the turbine and compressor wheels to rub off their respective housings.

### Symptoms:

- *Turbo screeching or whining during operation*
- *Loss of performance*
- *Whistling turbo*
- *Chipping of compressor or turbine blades*
- *Pitting around compressor inlet*
- *Pitting on compressor blades*

### Causes:

- *Debris from previous turbo failure*
- *Foreign objects such as screws, nuts, and bolts entering the compressor housing as a result of negligence.*
- *Debris from damaged air filters and air filter housings.*
- *Debris from exhaust manifold, cracked turbine housing, engine valve and piston impacting the turbine wheel.*



There are known issues of pieces of air filter housings expanding (creating a gap between housing and cover) allowing fine particles of debris to be ingested.

- Normally ingestion damage occurs straight away after fitting new turbo.
- Damage can also occur just after vehicle servicing. It is recommended that the air feed to the compressor is thoroughly inspected prior to every turbo change/ air filter change.
- There have also been many instances where debris can lodge in air filters/ air feed pipes and air box's for some time before eventually becoming loose and destroying the compressor wheels.

### **Remember:**

Your turbo may spin at up to *150,000 RPM*.

That's the equivalent of the wheel completing 4 complete revolutions every millisecond!! Your turbo's blade tips are running very close to the speed of sound during normal operation!!

A human hair/ piece of dust/ grain of sand etc, is enough to chip/shatter a blade, resulting in the turbine shaft becoming completely out of balance thus destroying the turbo's internal lubrication and bearing system.

**Insist on genuine high quality air filters.  
A clean air supply is vitally important to ensuring the long life of your turbocharger.**