



Turbo Failure: Turbocharger Overspeed

Turbocharger overspeed failure is normally caused by the vehicle's engine causing the turbo to spin up and run outside its designed limits. As a result the physical components can stress beyond their elastic limits and destroy the turbo.

Symptoms:

- Erosion of the turbine wheel and compressor wheel.
- Orange peel effect on back face of compressor wheel.
- Domed break on turbine shaft assembly.
- Wastegate/ Variable vane assembly stuck.
- Split compressor wheel.
- Signs of discoloration on turbine housing and core assembly
- Carbonized oil in oil galleries.
- Concave profile on rear of compressor wheel, indicating metal fatigue (Creep)



Causes:

- Performance chipping of the ECU, causing over delivery of fuel.
- ECU fault causing over delivery of fuel.
- Excessive oil temperature.
- Non-approved turbine housing specifications, causing excessive rotation speed.
- Turbo with worn bearings (with an oil leak) running on its own oil

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!!

Your turbo is designed to operate very efficiently on the vehicle to which it is fitted. Never fit a turbo to an application that its not designed for. Also ECU modifications/ faults can cause turbo failure after being fitted the engine after a few minutes.

**Insist on using the correct OE specified grade of oil in your turbocharger.
If your previous turbo has failed due to overspeed, ensue the electronic logic controlling your engine is thoroughly checked before fitting your new turbo.**