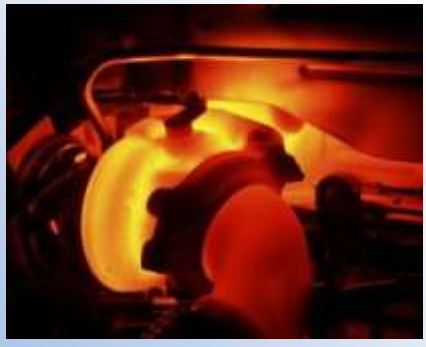
Turbo Failure:

Excessive Exhaust Gas Temperature

Extreme turbo temperatures are caused by excessive exhaust temperatures and can damage the turbo during operation or shutdown.

This leads to major damage to the turbine end of the turbocharger, resulting in cracked housings, excessive and rapid onset of corrosion and damage to any wastegate/ variable vane mechanisms fitted.

Symptoms:



- Erosion of the turbine wheel.
- Cracked turbine inlet flange/wall.
- Blockage at oil drain cavity of bearing housing
- Deformation of turbine housing.
- Carbonized oil
- Burnt oil on turbine shaft (spots from oil feed holes), and varnish effects (turbine end of shaft mainly).

Causes:

- ECU modifications (Performance chipping) to over deliver fuel
- Excessive exhaust temperatures, due to injection pump modifications to over deliver fuel.
- Excessive oil temperature.
- Non-approved turbine housing specifications, causing excessive rotation speed.
- Carbonizing due to poor oil quality.
- Repeated hot shutdown

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 turbocharger must be given adequate time to warm up before being subjected to heavy loads. It is also just as important to let the turbocharger cool down for a few seconds after being subjected to heavy loads. Failure to do this can result in premature turbo failure.

Insist on using the correct OE specified grade of oil in your turbocharger.
Allowing your turbo time to 'spool down and cool down' after a long trip is vitally important to ensuring the long life of your turbocharger.