



Valve Face Wear

Exhaust Valve Face Wear

This does not usually effect modern engines. Engine manufacturers spot its occurrence during development, and correct it, typically by the use of a stellite seat. However, on earlier engines without hard faced seats valve face pounding and wear can occur. This is due to high engine temperatures, coupled with slack tappets or weak valve springs.

Before the use of non-leaded fuels and LPG, the products of combustion adequately lubricates the exhaust valve. However, the exhaust gases in these fuels are relatively dryer and lubrication free. This increases valve face wear; revision of valve geometry, valve and seat materials and cast iron head metallurgy prevents it



Exhaust Valve Face Wear

Inlet Valve Face Wear - Turbocharged Diesel Engines

Inlet Valve Face Wear is specific to turbocharged diesel engines but not to turbocharged petrol engines. Turbocharging naturally increases the pressure during the induction stroke. However, it also increases air pressure in the inlet port to above atmospheric. This prevents the air stream carrying any lubrication oil from the valve guide. Consequently, the valve face and seat run dry. Wear can occur on either, though in practice mainly on the valve face.

Although similar conditions occur in the turbocharged petrol engine, the wetter fuel provides inlet valve and seat lubrication.



Inlet Valve Face Wear

Summary

Possible causes of exhaust valve face wear:

- High engine temperature coupled with excessive tappet clearance, weak valve springs etc.
- Valve to port seat misalignment.
- Engine operated on either low lead or LPG fuel (Petrol engines)

Inlet valve face wear (turbocharged diesel engines):

- Caused by "dry" valve seating resulting from high inlet port pressures and subsequent lack of lubricating oil mist drawn from the valve guide. Ensure to fit materials that are to the correct specification.