

## Failure Diagnosis – Insufficient Effective Clamping Load

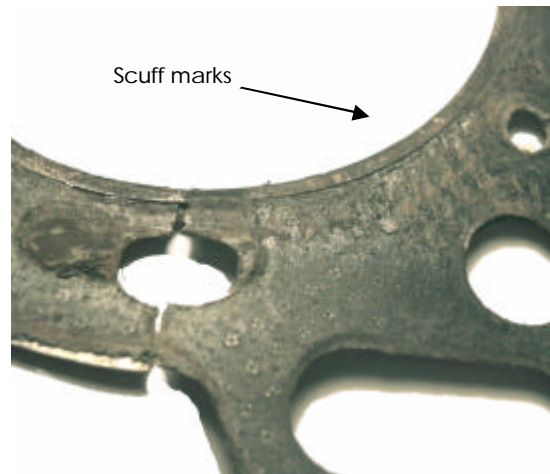
Replacement of engine gaskets can be time wasted, if the cause of engine failure has not been identified. Gaskets act much like a safety valve or fuse, designed to give way, amid underlying fitting or operational problems, thus preventing more detrimental engine damage. As such, clues left on the gasket may help you diagnose failure, preventing any re-occurrence.

Gaskets with radial splitting of bore ferrules or fractures to the gasket facing and core, show that the gasket has been operating in an environment of insufficient effective clamping load. Without effective loading, the gasket moves between mating surfaces. This repetitive movement weakens and eventually fractures the gasket.

Other signs on gaskets can be elongated bolt holes or scuffing marks on the gasket facing. Sealants, damaged or un-lubricated bolts, un-calibrated torque wrenches, unclean bolt holes, excessive temperature and uneven mating surface condition are factors that may contribute to insufficient clamping load.



Radial splitting of bore ferrules



Core fracture at bolt hole