

Wear Diagnosis of Diesel Engine Helical Gear

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Abstract : This paper presents metallurgical investigation of failed helical gear of diesel engine gear box used in a car. The failure had occurred near the bottomland of the tooth spacing. The failed surface was studied under Scanning Electron Microscope (SEM) and also visually investigated. The images produced through SEM at various magnifications were studied. Detailed metallurgical study indicates that failure was due to foreign material inclusion which is a casting defect. Further study also revealed pitting, spalling and inter-granular fracture as the causes of gear failure.

Keywords : helical gear, scanning electron microscope, casting defect, pitting

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