

A Survey of Failure in Automobile Engine Crankshaft

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Abstract: *The crankshafts of piston engine with circular cross section are invariably used for transmission of power. In this survey, failure analyses of different engine crankshafts are studied. In crankshaft the failure is occurred due to fluctuating load called as fatigue failure. Mechanical fatigue failure and thermal fatigue failure are probably the most common cause of crankshaft failure. The fatigue crack initiated from the web-fillet region, crank pin region and lubricating holes. Stress concentration occurring at the key way root radius & sharp changes in cross-sectional area of shaft. For analysis, different methods are used such as visual analysis, microscopic analysis using SEM (Scanning electron microscope) and by conducting some laboratory test. To prevent the failure of crankshaft, operating, mechanical and repairing sources of failure are to be controlled. Also machining and final grinding has to be done carefully to prevent formation of discontinuities or crack like defect in fillet region. Induction hardening or nitriding of fillet region is required also fillet radius need to be increased.*

Keywords: Engine, Crankshaft, Fatigue failure

