عنوان مقاله:

Prediction of Cavitation Failure in Crankpin Bearings

محل انتشار:

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خلاصه مقاله:

Cavitation failure is a common failure in bearing shells. Due to the generation and immediate collapse of small gas bubbles, causing high-pressure pulses, the bearing surface is being locally damaged. Cavitation failure is also observed in IC engines due to highly dynamic loading, oscillation of pins, the turbulence of oil flow, and other factors. In this paper, cavitation failure in the crankpin bearing of an IC engine is studied. In order to calculate the bearing lubrication characteristic such as oil fill ratio and maximum oil film pressure, the Elasto-Hydrodynamic Lubrication (EHL) method to consider the effect of stiffness of the bearing shell housing in the model is utilized that incorporates mass conserving algorithms. In order to investigate the effect of some design parameters, such as clearance height between shaft and bearing shell, oil supply temperature and pressure, and oil bore position, on the cavitation failure, a parametric study was also done. The results showed that the cavitation failure in crankpin bearing is not critical and it .is slight

کلمات کلیدی:

Cavitation Failure, Crankpin Bearing, Elasto-Hydrodynamic Lubrication, IC engine