Experimental Investigation on Load Capacity and Wear Rate of Principal Metal Alloys Used for Bearing Manufacture

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Abstract.

In this study, a boundary condition test was conducted on journal bearing materials (Al-Tin alloy and Lead-Bronze alloy) used in Peugeot and Toyota automobiles were examined at room temperature conditions. The results of experiments are presented in graphics which proves that the average loading capacities, PV factor and wear factor for the two alloys are 143.94kPa, 63.17kPa, 6.76 m3, 4.7 m3, 16.97 and 8.75 respectively. The coefficient of wear for Lead-Bronze is 0.4, while that of AL-Tin is 0.54. The Lead-Bronze alloy shows better properties than the Al-Tin alloy. It was also observed that both wear rate and load capacity factor increase with increase in journal surface velocity for Al-Tin Alloy and decreases for Lead-Bronze alloy.

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