

Comparisons of Individual and Group Replacement Policies for a Series Connection System with Two Machines

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Abstract : This paper studies the comparisons of individual and group replacement policies for a series connection system with two machines. Suppose that manufacturer's production system is a series connection system which is combined by two machines. For two machines, when machines fail within the operating time, minimal repair is performed for machines by the manufacturer. The manufacturer plans to a preventive replacement for machines at a pre-specified time to maintain system normal operation. Under these maintenance policies, the maintenance cost rate models of individual and group replacement for a series connection system with two machines is derived and further, optimal preventive replacement time is obtained such that the expected total maintenance cost rate is minimized. Finally, some numerical examples are given to illustrate the influences of individual and group replacement policies to the maintenance cost rate.

Keywords : individual replacement, group replacement, replacement time, two machines, series connection system

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