

Optimal production and inspection strategy while considering preventive maintenance errors and minimal repair

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Abstract

This paper extends an integrated model of *Economic Production Quantity* (EPQ) and *Preventive Maintenance* (PM) to incorporate possibilities of PM errors and minimal repair. Our model determines simultaneously the optimal number of inspection, the duration of the first inspection interval, the EPQ and the PM level. Numerical examples of Weibull shock models are given to show that incorporating PM errors will raise the expected total cost and lower the EPQ while allowing minimal repair will lower the expected total cost. Our analyses demonstrate that both PM errors and minimal repair significantly influence the optimal policy and the expected cost.

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