

Inventory Control for Purchased Part under Long Lead Time and Uncertain Demand: MRP vs Demand-Driven MRP Approach

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Abstract : MRP as a production control system is appropriate for the deterministic environment. Unfortunately, most production systems such as customer demands are stochastic. Demand-Driven MRP (DDMRP) is a new approach for inventory control system, and it deals with demand uncertainty. The objective of this paper is to compare the MRP and DDMRP work for a long lead time and uncertain demand in terms of on-hand inventory levels. The evaluation is conducted through a discrete event simulation using purchased part data from an automotive company. The result is MRP gives 50,759 pcs / day while DDMRP gives 34,835 pcs / day (reduce 32%), it means DDMRP is more effective inventory control than MRP in terms of on-hand inventory levels.

Keywords : Demand-Driven MRP, long lead time, MRP, uncertain demand

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