

同步物流系统下准时化生产与配送调度问题研究

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Research on production and distribution scheduling in assembly system with synchronous logistics

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摘要 对于“加工-装配”行业而言,物流管理水平的高低直接决定了供应链绩效的好坏。本文以Supply Hub运作模式为背景,研究同步物流下装配系统中各节点的生产与配送调度问题。建立供应链各参与方的生产与配送模型,并通过规划求解得到供应商和制造商的最优生产周期、零部件的最优配送间隔以及零售商的最佳采购周期。最后,结合数值实验,对同步物流模式和传统物流模式下的供应链绩效进行了对比分析。研究表明:较之传统物流模式,基于同步化物流方式的装配系统总成本更低,这主要得益于库存成本的下降;由于采取拉动式的生产模式,因此同步物流系统下供应链中的生产和配送活动更加频繁;生产调整成本的增加提高了制造商的平均总成本,由此可见在同步物流系统下,供应商、制造商和零售商之间更需要相互协商和收益共享,从而实现多赢。

关键词: [同步化物流](#) [Supply Hub](#) [装配系统](#) [准时化生产与配送](#)

Abstract: As for assembly industry, performance of supply chain is directly decided by the level of logistics management. Based on the setting of Supply Hub, the production and distribution issues of every node in an assembly system are studied. Therefore, the production-distribution system is mathematically modeled and solved by programming software. By doing so, the optimal production interval of suppliers and manufacturer, and distribution frequency of parts, as well as the purchase cycle of retailer are got. The comparative analysis between traditional logistics mode and synchronous logistics mode is also taken. It is concluded that: the assembly system based on synchronous logistics can generate lower total average cost because of inventory cost reduction. In the supply chain with synchronous logistics, suppliers and manufacturer produce and distribute more frequently. Although the total cost is reduced, more setup cost results in the increase of cost for manufacturer, which indicates participants should do well in cooperation and negotiation in order to make win-win.

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