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Articles

Takt Time Grouping: implementing kanbanflow manufacturing in an unbalanced, high variation cycle-time process with moving constraints

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Abstract

One-piece flow and kanban/pull methods have been used to reduce work-in-process (WIP) and flowtime in manufacturing flow processes; however, these methods have limitations. For example, one-piece flow does not work well when there are relatively

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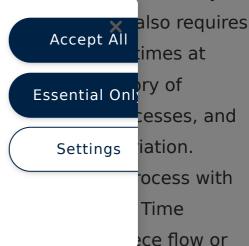
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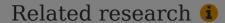
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DBR do not provide good results. TTG combines one-piece flow manufacturing, transfer-batch sizing and DBR concepts through the use of a constraints-based transfer-batch sizing formula. Using a discrete event simulation model, it is shown that TTG increases throughput rate as compared to one-piece flow, CONWIP and DBR approaches, with much lower WIP inventory and faster flowtime than CONWIP and DBR.

Q Keywords: flow manufacturing kanban theory of constraints drum-buffer-rope cycle time variation mixed model transfer-batch sizing CONWIP



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