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Articles

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

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Abstra

One-piec -process (WIP) an ds have limitatio relatively large se also requires oper times at each ory of constrai cesses, and it has be iation. However ocess with moving Time Grouping (TTG) for implementing kanban flow manufacturing, when one piece flow or

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.

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