

Low Volume Lean Center

www.lowvolumelean.com

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What is different when applying lean in high mix, low volume manufacturing?

Current Topic: Hybrid Pull Systems (part 1, steps 1-2)

Pull systems do work when you have 1,000's of part numbers, though obviously you can not put all parts on pull. Many parts have no forecasted demand and those that are forecasted might be considerably low volume therefore they are also not attractive to set up as a kanban (pull) parts since this would require you to carry a lot of small inventories. Even setting up all of your "higher volume parts" on kanban might require too much inventory. The idea is to select and manage some parts by kanban and the others by MRP.

1. To help decide if your business is a candidate, try the following:
Since even high mix job shops normally follow the 80/20 rule, meaning that 20% of the part numbers make up about 80% of the current shipping volume (either by quantity or cost), check if this applies in your business. Sort your last 3 months of shipments from highest to lowest by quantity and also a descending sort by sales price. Then take the total quantity of parts and the total \$ shipped for the 3 months and calculate 80% of each total. Then set up your spreadsheet to sum the cumulative total at each line of data (by both quantity and cost) and draw lines where that sum equates to the 80% calculation you made. Now look at where you drew the line and see if at that point is about 20% of the part numbers you shipped or 20% of the total of your order lines. If 80% of your business is accounted for by only 20% (actually up to 30%) of you part numbers, you should be able to apply a hybrid pull system and received some of these benefits:
 - Easier to balance capacity and workload, easier planning
 - You are producing what the customer is consuming, instead of working to an inaccurate forecast
 - Can have shortened lead time with smaller batches
 - You have the choice of batch size
 - Everyone can understand the priorities when using a kanban board
 - Less capital is generally tied up in inventory costs
2. Choose which parts should be put on kanban (pull):
Again using a spreadsheet, group together parts by the first process they are routed to. Each group should include the part numbers sold during the last 3 months. Then sort each group from highest to lowest usage (include a column showing the number of orders shipped for that part during this period). Depending on the size of these orders, the number of orders shipped, and the general confidence in the forecasted usage of these parts, you should start by selecting one group of these parts (which is for a machine or process) and include between 10-50 of the highest usage parts that have multiple orders and a reasonable forecast. This will be the first machine you will start with kanban, but because only some parts will be put on kanban you will use your MRP system to plan the other parts.

How to calculate kanban levels, set up a kanban system and simultaneously use MRP will be explained in subsequent briefs on this web-site.