

Case Study: Flange Yoke Cell

- Challenge:
 - We were confronted with a situation where a family of eight flange yokes were chronically late for delivery.
 - Although the plan was for a 30-day lead time, deliveries reached 45 days with extensive expediting.
- Analysis:
 - Plant was arranged with separate departments for each machine type and the yoke was placed into WIP inventory as it left each department prior to being scheduled to run in the next.
 - The family of flange yokes was routed through all or several of six departments (see layout)
 - Each machine department contained multiple machines capable of performing the required task.

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- Proposal:
 - Select one machine from each of the effected machine departments.
 - Clear floor-space by removing WIP stock rack which will no longer be necessary and relocating a couple machines
 - Create a manufacturing cell in a u-shaped form with the product flowing clockwise from a raw forging tub through the selected six machines to a finished parts tub. (see layout)
 - Cross-train operators to setup and run all six machines.

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- Results:
 - Free floor-space due to removal of WIP inventory rack and closer spacing of effected machines
 - Only one scheduling activity for a completed yoke
 - Less than four minutes of processing lead time versus previous standard of 30 days and actual of as much as 45 days
 - Improved quality as the operator handles each piece and catches defects and variability as it takes place rather than after all pieces are produced
 - Elimination of WIP inventory and associated stock rack
 - 63% less direct labor
 - 83% less indirect labor (fork lift operators)
 - Virtually zero sort, rework and scrap
 - Much shorter overall lead times with less capital tied up in raw and finished goods inventory

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	Before:	After:
• Operations scheduled	6	1
• Labor Content	.1333 Hrs.	.0500
• Lead-time	15-45 Days	1 Day
• WIP inventory ave:	1 Mo. Supply	6 Pieces
• Raw or Finished Goods	1 Mo. Supply	< 15 Days
• Fork lift moves	12	2
• Floor-space consumed	100%	< 50%