

COMPACTION AMERICA

LEAN

MANUFACTURING

- Steve Woodward

- Jim Schneider

– Company Background

- Kewanee, Illinois
- OEM / Highway Construction Equipment
- Owned by Bomag (Boppard Germany)
- Owned by SPX Corporation (US)
- Both locations are union shops
- Worldwide Market Leader in Compaction

Lean Manufacturing



Lean Manufacturing

- Reasons
 - Corporate “Lean” Objective
 - Customer Controlled Factory
 - Reduce customer lead times
 - 15 Days
 - Increase inventory turns
 - Major increase in build capacity
 - Eliminate waste

Lean Manufacturing

- Background
 - Mid - 2003 reviewing “Lean” resources
 - Utilizing Fenn Mfg. Resources
 - Utilizing Illinois Manufacturing Extension (IMEC)
 - Benchmarking
 - John Deere Harvester
 - John Deere Construction Equipment
 - Vactor Manufacturing
 - Elgin Sweeper
 - Best fit for Compaction America

Lean Manufacturing

- Major Issues
 - Large WIP inventory / incorrect parts
 - **Unresponsive MRP system**
 - Large finished goods inventory
 - **Inaccurate forecasting**
 - Long assembly lead times
 - **60 days (primary and final)**
 - Slow response time
 - **Loss of orders**

Lean Manufacturing

- Goals
 - Reduce WIP inventory by 50%
 - Decrease internal lead time & material handling
 - » Moving assembly line
 - » Work cells
 - Quality corrective action program
 - » Internal & external
 - Implement KanBan replenishment
 - Reduce finished goods inventory
 - Improve short and long term forecast
 - » Measure the accuracy

Lean Manufacturing

- Project information
 - Lean training
 - 8 hour sessions (May 2003)
 - Principles with simulation
 - All employees (hourly to president)
 - Lean manufacturing team meetings
 - Assembly & Fabrication teams
 - » Ownership
 - » Input / ideas

Lean Manufacturing

- 2004 Production Plan
 - Build / Ship Challenges
 - Significant yr over yr increase in volume
 - Market Projections
 - New Product Migration
 - Forecasting Techniques
 - Seasonal Shipping Requirements
 - Wide Variety of Models / Options
 - 4 basic product families
 - 35 models
 - 150+ options

Lean Manufacturing

- Forecasting Accuracy
 - Reviewing methodology
 - Team assigned to investigate
- Solution search**
- » Academia
 - » Bradley University
 - » Continuing software search
- The solution must be compatible with SAP &
 - **our German counterpart**

Lean Manufacturing

- Progress
 - Training
 - All employees 8 hour Lean simulation
 - 5S
 - Trained factory employees
 - Numerous work areas
 - Drum line (90% complete)
 - Linking operations using the cell concept
 - Reducing job classifications to allow flexibility
 - Reduced lead-time (30 to 8 days)
 - Reduced set-up time (up to 95%)

Lean Manufacturing



Lean Manufacturing



Lean Manufacturing

- Progress
 - Assembly Line (50% complete)
 - From station build to moving line
 - Reduced lead time from 30 to 8 days
 - Supplier involvement
 - Supplier information meeting
 - Top 25 suppliers
 - Utilizing supplier resources
 - » Ideas
 - » Background

Lean Manufacturing

- Progress
 - Inventory
 - Testing KanBan replenishment
 - Beginning with steel parts
 - Using corporate SAP solution
 - Will utilize bar codes
 - Vendor inventory management
 - Hardware
 - Kit purchases
 - » Hoses
 - » Frame components

Lean Manufacturing

- Schedule / Replenishment Philosophy
 - 3 week schedule freeze
 - Sold or stock unit
 - Three month planning window
 - Allows manufacturing to
 - Sequence final assembly
 - Sequence major internal components
 - Frames & drums
 - Sequence major external components
 - Engines, axles, pumps, etc.
 - KanBan medium value items
 - Min-max low value items

Lean Manufacturing

- **In Conclusion:**
 - **Introduction of Lean Manufacturing Principles**
 - Improve product flow
 - Decrease internal lead time
 - Reduced material handling
 - **Improve response time to our CUSTOMERS**
 - Reducing lead time from 60 to 16 days
 - New plant layout – moving assembly lines
 - Concentrate on core competencies:
 - » Frames, Drums and Assembly

Lean Manufacturing

Improved inventory management

Introduction of KanBan

Vendor managed inventory

Increase short & long term forecast accuracy

Supplier Performance: (Measured)

Quality Parts (Inspected and certified)

On time delivery

Reduced lead times

Improve communication (working to improve)

Cost reductions not price reductions

Thanks for your attention.

Questions?