Operational Excellence
In Engineering Industry
(Productivity Improvement in Machine Building)
Case Study
INDIA

About Client

Client is one of the leading textile machine manufacturers and suppliers based in western India, with reach across India and a significant share of the Indian market.

Major products are twisting machine, cone winding machines, cabling machine, yarn winding machines, etc. The client is also one of the leading suppliers to twisting machine in exports.
Objectives

Increasing manpower productivity
Improving material flow
Establishing Standard Operating Procedures
Recommending line improvements
Reducing the labor costs
Eliminating non-value adding activities
Reducing operator fatigue

Analysis

Faber Infinite conducted initial analysis, it reflected following:

- Lack of work station design & standards for effective workflow
- Room for improvement in Line Balancing
- Lack of multiskilled operators
- Current production output measured at 24 spindles/Day
- Current cycle time measured at 487 min & current work content found 786 min
- Current productivity/ person/day established to be 1.84 spindles

Approach

- Establishing Current State Map (CSM) & designing Future State Map (FSM) for Line 1
- Conducting time & motion study for Line 1
- Analyzing current manpower distribution for each work station
- Video shooting for each process
- Redesigned work stations & line balancing
Project Implementation

1. Conducted detailed study of each process & administering ECRS (Eliminate, Combine, Rearrange, and Simplify) methodology
2. 38 improvement plans were identified & implemented
3. Prepared 13 alternatives of on structure precedence diagram with different possible process flows
4. Finalized most efficient flow as per the precedence diagram
5. Established line balancing for Line 1 considering 3 different variants
6. Combined 22 processes for optimization in balancing with minimum variations
7. Finalized 8 work stations on structure with a “C” shape structure after conducting various trials
8. Conducted 1st trial as per Line Balancing and video shooting done for all 8 stations
9. Simplified operation sequence after 1st trial
10. Final trial conducted after simplification of different operations
11. Redesigned & implemented improvements at 8 work stations
12. Every work station had standardized
   a. Visual SOP (Standard Operating Procedures)
   b. Both side hardware in hanging positions
   c. Power tools on top of the structure in hanging condition
   d. One Point Lessons (OPL) addressing customer complaints related to the station
   e. Standard table for subassemblies required

Results Delivered

Production/ day increased from 24 units to 64 units

Productivity /person/day increased from 1.84 units to 4.92 units

Reduced cycle time from 487 min to 186 min

Reduced work content from 786 min to 304 min

847 Square feet space saved

38 improvement drivers implemented successfully

Sustenance

Implemented results shall be sustained over a period using Systematic Audit & Improvement Loop (SAIL) & Daily Work Management (DWM)

Visit Faber at www.faberinfinite.com for more information and a complete list of regional contacts or send us e-mail: consulting@faberinfinite.com