

# Study Of Electrical Insulator Manufacturer Industry – Case Study

## About the Client

- Client is a manufacturer & supplier of cable connection systems, asset protection systems, cable management solutions, electrical safety products, heat tracing systems, and other products.
- Client vision is provides products and solutions to energy infrastructure.

## Aims/Objectives

- Work content measurement using PMTS techniques.
- Work Distribution/Line Balancing for manpower utilization
- Resource calculations i.e., manpower as well as machines
- Improvement & suggestions for making existing system better

## Key Points

- Multi Man Machining concept application for optimization.
- Low cost automation for accuracy and manpower optimization
- Systematic elimination of NVA by analysis.

## Client's Challenge

- Balancing of resources (Man and Machine) in three lines.
- Improvement in manpower utilization.
- Identify maximum capacity of stations and machine utilization
- Eliminates NVA from all areas

## PMI's Approach

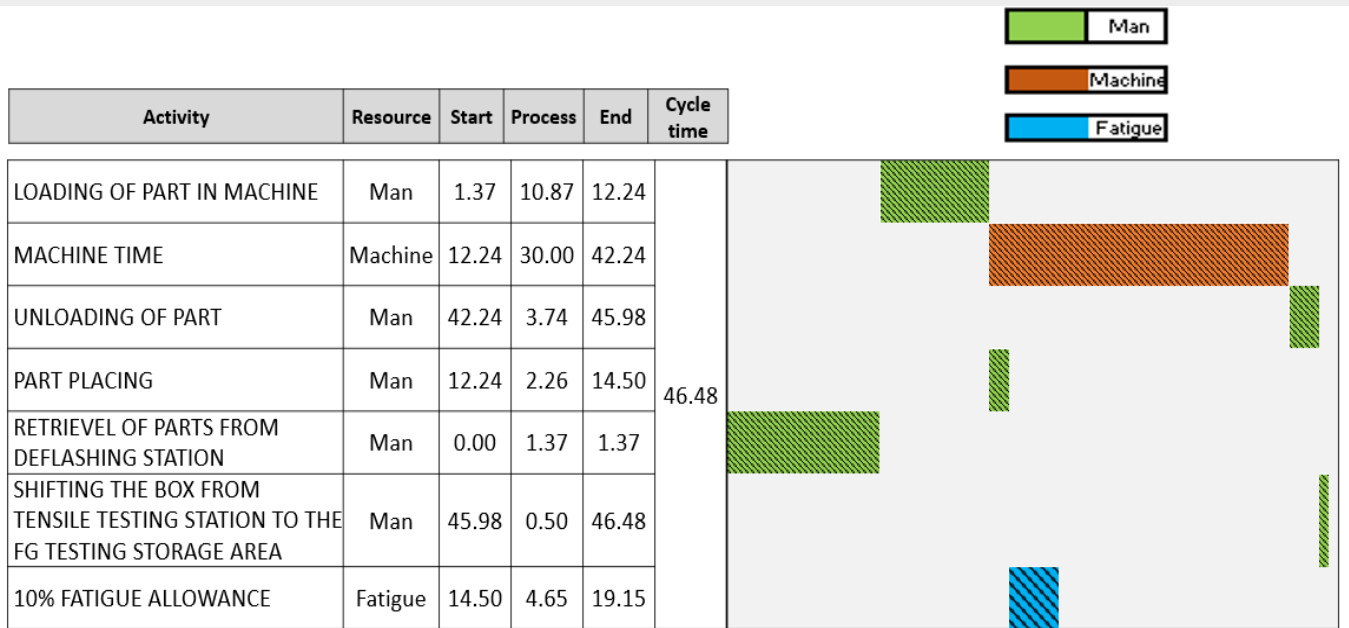
- Video shooting of all activities that are in scope of work.
- Work content determination for all activities using MODAPTS technique of PMTS.
- Work content finalization.
- Manpower utilization calculation and balancing of activities for increase manpower utilization.

## Data Collection-

- **On-site visit** - Visiting Facility by PMI team for data collection.
- **Understanding Process** - Understanding processes & data collection from client.
- **Video Shooting** - Video shooting & observation of machine as well as manual activities.
- **Video Sharing** - Sharing of videos with client

## Data Analysis -

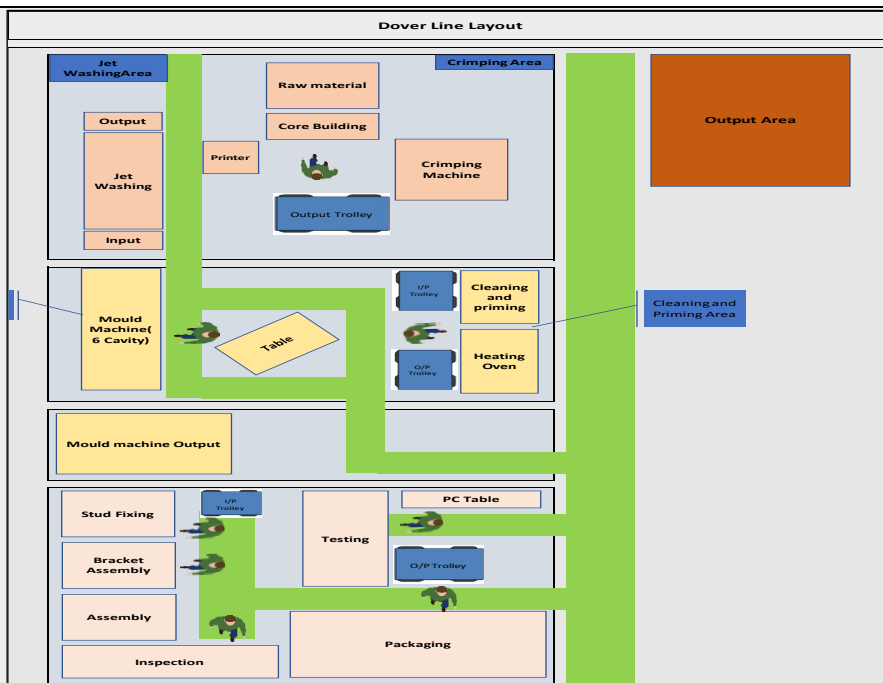
- Client CFT team supported during data collection phase for better understanding of process flow.
- Elemental details validation & all areas analysis discussed with client and finalized it. Some improvement points are given to client to increase plant productivity.



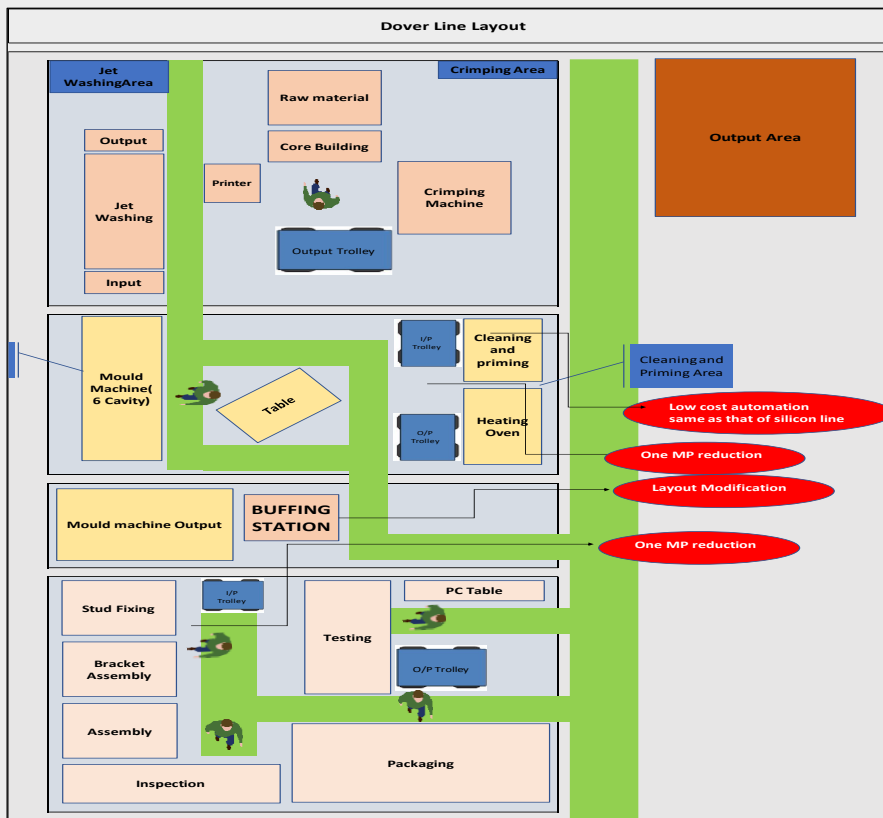
## Results & Conclusion

We have proposed three conditions to client to get manpower saving on different conditions. Which are mentioned in below

Descriptions	Manpower Reduction per shift				Proposed 1 As per existing system		Proposed 2 Low Cost Automation & Layout Modification		Proposed 3 Low Cost Automation ( No effect on productivity) & Layout Modification	
	Existing	Proposed_1	Proposed_2	Proposed_3	Man power Reduction (Nos)	Productivity Improvement	Man power Reduction (Nos)	Productivity Improvement	Man power Reduction (Nos)	Productivity Improvement
Manpower per shift	7.90	6.60	5.60	5.60	1.30	22.09%	2.30	30.49%	2.30	30.49%
Production per shift	200.00	204.00	185.00	185.00						
Unit per Man	25.32	30.91	33.04	33.04						

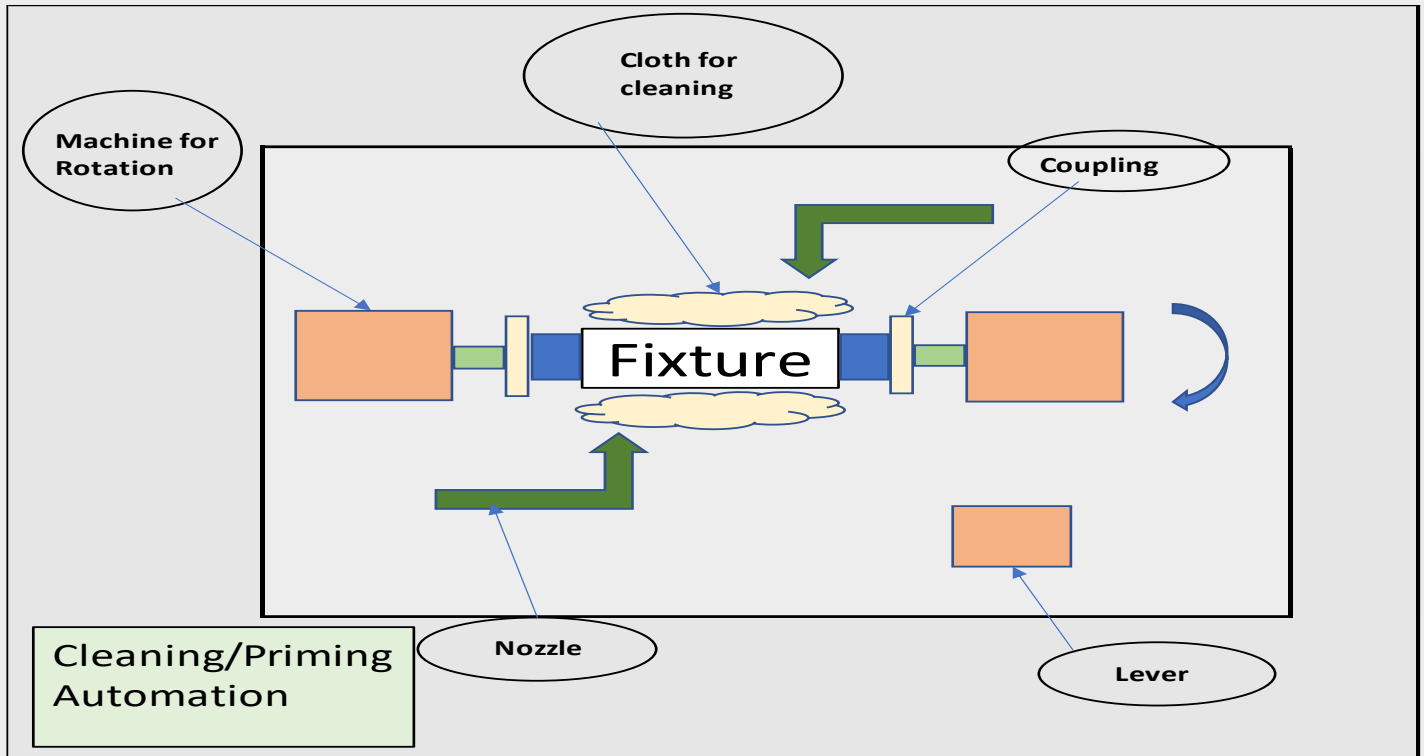


**Existing Layout**



**Propose Layout**

## Low Cost Automation-Dover Line



### Potential Improvements

Line	Station	Problem Statement/Existing Condition	Proposed Condition	NVA Type	Work Content (sec.)		Work content saved (sec.)	Investment	Category	Benefits
					Existing	Proposed				
Silicon Insulator	Sanding, Cleaning and Priming	OP waiting for the refilling process	OP idleness should be eliminated	Idle time	114	0	114	Low	Work Content reduction	Optimized Cycle Time.
	1st Stage Inspection	Rejected parts bin is too far from the OP	Bin must be placed nearer to the OP	Movement	6.45	0	6.45	Low	Work Content reduction	Optimized Cycle Time.
	Tensile Testing	OP movement is too much for bringing the untested parts box from the 1st stage inspection	A passage must be provided for movement from the 1st stage inspection to the tensile testing station	Movement	131.7	55.59	76.11	Low	Work Content reduction	Optimized Cycle Time.
	2nd Stage Quality Inspection	OP movement is too much for bringing the untested parts box from the Tensile Testing station	2nd Stage quality Lab may be shifted nearer to the tensile testing and FG area	Movement	94.91	94.91	0	Low	Work Content reduction	Optimized Cycle Time.
		OP movement for transferring the tested box to the FG area to much	2nd Stage quality Lab may be shifted nearer to the tensile testing and FG area	Movement	101.62	43.57	58.05	Low	Work Content reduction	Optimized Cycle Time.
EVA Insulator	Crimping	OP has to hold the part while crimping the part	Proper fixture must be provided for holding the part while crimping	Unnecessary holding the part	30.00	0	30.00	Low	Work Content reduction	Fatigue reduction
	Cleaning and Priming	The Input and Output trollies are at somewhat far distance from the station	The trollies must be moved closer to the station	Movement	1.29	0	1.29	Low	Work Content reduction	Optimized Cycle Time.

## Contact Details

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