



FICEP
NEWS | 2/2020

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How Does FICEP Manufacture Over 100
CNC Different Fabrication Lines in a Cost
Effective Manner?

Lean Manufacturing



Since their founding in 1930 FICEP has built their reputation as the world's most dominant and largest manufacturer of CNC fabrication lines for plate and structural steel. Their global strategy and reason for their worldwide dominance is centered on developing the most innovative and cost effective solution for each unique market. The ideal solution in one market could be a single spindle drilling line where a different market requires a multiple spindle drilling line that also provides scribing and milling capability. This extreme range of system capabilities and the need to furnish cost effective solutions between diverse markets requires some unique manufacturing challenges.

Typically, the needs of the target markets not only require different levels of capabilities but they are generally requested to address a client's pending contract so delivery flexibility is paramount. As a delivery requirement maybe initially urgent, it is frequently delayed because of slow progress on the construction of the new facility where the line maybe installed or the financing could be facing some unexpected hurdles.



In summary, the challenges that FICEP frequently faces in serving the global markets are as follows:

- The need for a combination of uniquely different solutions for the dynamics of each specific market.
- The ability to serve a client with a customized solution with a fast delivery.
- Delays in the project can occur because of financing challenges or the client's construction delays of a new facility. The ability to be able to quickly change the priorities of the production schedule without incurring additional production cost and delays is paramount.

As these challenges became more relevant in the day to day business, FICEP realized that they needed to implement a better system to achieve the continuing demands of the market. They needed to achieve greater flexibility while maintaining a low cost manufacturing structure.

After engaging outside consultants in conjunction with Politecnico di Mila-

LEAN MANUFACTURING
allows to achieve greater FLEXIBILITY while maintaining a LOW COST manufacturing structure

no, it was decided that a rethinking of the manufacturing process and the adoption of “Lean Manufacturing” was the type of program that needed to be implemented to achieve this goal.

This was a company-wide initiative that had to involve an integrated approach by sales, engineering and manufacturing. Producing over 100 different CNC lines, most in quantities of less than 100 units per year for each model, required the implementation of a system of standards and commonality to achieve the goal.

Main areas of emphasis were

- Standardization
- Production planning
- Logistics
- Assembly

Goals and standards were required to be established for all aspects of the production process.

Starting with Sales, the commonality of options and features needed to be adopted to start the process. Engineering needed to standardize parts and assemblies that could be used on different models rather than have a unique part or sub assembly for each system.

The effort put forth by Sales and Engineering was just the beginning as the real streamlining of the production process had to occur in the manufacturing department.

The manufacturing team at FICEP explains that the key words are standardization, modularity and organization. An assembly line was started for both the sub-assemblies and the machines.



Subsequently, assemblies are all created in the same identical manner. This gains flexibility as a machine model can be changed from one type to another based on design standardization in the early stages to give sales more flexibility to change the ultimate model and optional configuration.

Multiple shop floor management meetings are held daily to identify potential delays in the required parts or assemblies so this expediting task can be given a priority. The machine assembly dashboard must be all green (all parts available) before a machine or sub assembly task hits the floor. This shop floor management system, real heart of all supply chain activities' synchronization, is called "The FICEP Synchro System".

Even the fasteners and only the corresponding tools required for each model are presented to the corresponding assembly area. Assembly personnel are not substituting one fastener for the designed fastener or using a tool that is not optimally designed for the specific task.



When the program was initially implemented, there were some reservations from the assembly technicians as change always presents some challenges. These initial concerns have been replaced, as now the same assembly technicians are constantly coming forward with new ideas to streamline and standardize the process to take it to even a higher level.

Wooden pallets are eliminated on the assembly floor and replaced with standardized multi-tier mobile carts for maximum efficiency and organization.



Once assembled, the check-out process for each system is a defined routine and sequence so nothing is missed during this critical step.

As a system is approved for shipment, there is even a standardization of sizes and types of shipment crates as well as their content to eliminate hunting for different elements during the site installation.

This standardization of all aspects of the machine assembly process has enabled FICEP to achieve the maximum flexibility in filling orders with an expansive product line and in the desired time frame.

*The manufacturing team at FICEP explains:
“The key words in our production process
are STANDARDIZATION, MODULARITY
and ORGANIZATION”*

