



OFFICE FURNITURE

STEELCASE

LEAN PRODUCTION AND INDUSTRY 4.0: MAKE YOURSELF COMFORTABLE

4 STEELCASE, with more than 15,000 employees and production sites in various parts of the world is renown in the interior furnishing market where its over 100-year experience is respected. In its plant in Wisches, France, not far from Strasbourg in the heart of Europe, STEELCASE produces many models of office chairs and armchairs in a production site with long history and an ambitious modernization project.

The Wisches plant was started by a company that produced tables and closets with the French brand name of STAFFORD. In 1974, to become established in the chair market, Stafford entered into a joint venture with the renowned STEELCASE that later acquired the whole company in 2011. Today, 350 people work in the 30,000 sqm of the plant to produce 600,000 chairs/year. Four different chair models and 6 armchair models, for office use, correspond in total to more than 40 different frame versions. All are high end products. Flexibility and quality are the keywords that characterize the production process.

“We need an efficient and flexible process able to produce large volumes but also able to change from one production



to the other”, explains Pascal Jaeger, production manager. He continues: “We work on two shifts according to the principles of lean production. Our production is all Just In Time, the order arrives three weeks before delivery and we never produce for stock. Our lead time is currently 12 hours and every 4 hours we produce all our seat models.” It is understood how process flexibility is a need more than a desire.

“Work is organized on lines dedicated to a specific product range. Orders arrive three weeks before production and this is the time that we must manufacture the product. We also have high flexibility of operators, for example we can produce 8,000 chairs one week and two weeks later we can produce 15,000 chairs.

We are in a transition phase toward a more modern technological process that started with the purchase of the tube bending machine E-TURN from BLM GROUP. We had to replace our machines that had been working on two shifts for 20 years, and upgrade to a different technology that would include automation.” The production process of an important manufacturing site cannot just be changed for the technical interest of an engineer enthusiastic of new technologies. “It would be necessary to demonstrate to management that each investment is cost-effective”, confirms Pascal Jaeger. Pascal Jaeger, and his colleague Pascal Dastillung who is responsible for metal processing, had to demonstrate this aspect.

5 It wasn't difficult: on a part of the chair base BLM GROUP focused to obtain a production increase by 30%, but it actually resulted in an increase by 50%! Such an outstanding result couldn't be obtained on all parts, but it turned out that there were also significant safety advantages.

These benefits made the decision to move forward with the equipment investment straightforward. Safety at STEELCASE comes before quality. It is evident looking at the production department: clean and tidy, with special attention to safety and quality of working environment. With E-TURN, the high

productivity combines with a constant high safety factor. It is no longer necessary for an operator to stay at the machine. This becomes a considerable saving in our overall operational & production expenses.

The E-TURN was quickly installed and integrated into the production cycle of the plant, producing 140,000 parts from the start of the year. "This has been very positive and has made a fundamental contribution to the decision to continue with the investment." Jaeger explains and continues: "Now we need two new electric tube bending machines with automatized feed and an unload robot. The objective is a fully-automated line which also includes laser systems. The robots will pick up the parts, move them directly to welding, and then onto painting.

INDUSTRY 4.0

The final objective is to have fully robotized lines. We are talking about Industry 4.0 and Jaeger and Dastillung have defined the scope and objectives of the project. "I wish I could see machine data on my smartphone: I know that it is already possible today, but it is necessary for the future. Our relationship with BLM has worked. We already had BLM machines in the past and today we purchased the E-TURN from BLM."

BLM has become a partner and key contributor to the success of the next phase in the project. The Lasertube and the robots will further increase process quality level.

"It took us five years to make the decision to invest in new machines, but meanwhile we continued to work on processes to improve efficiencies. If you want to utilize technologically advanced machines at maximum capability, you must change the process too. In the past, the central part of production was the operator, there was one for each machine; now the technicians and the engineers send information to the machine necessary to carry out production and process return data. This also meant investing further in our employees by training on the new processes."



Software is playing a key role in this process. The possibility to work outside the machine with VGP3D from a PC in the office is an advantage. Simulation and the possibility to load 3D models are operations that can be conveniently carried out in the office and are in line with the current change of philosophy in personnel. Everything is managed from the office and this is really a great advantage.



The objective is to be always more efficient in terms of safety, quality, service, costs, lead time and efficiency.

With the E-TURN, quality has vastly improved due to the all-electric operation and the usage of new tools, safety is higher because there is no need for an operator to be constantly present to run the machine, and productivity has radically improved. Previously we had an operator in front of every machine, whereas now we have an automatic feed system.

Repeatability, no operator present at machine, reliability, cycle time... In other words, the BLM system has exceeded the expectations of Jaeger and Dastillung.

When the parts were ready for the welding operation, we realized that all parts were produced identically. This machine has allowed us to increase our internal and external quality level. Previously, the operator that found a faulty part had to rework it to meet specification.

This is no longer necessary, as production process is inherently reliable and repetitive with the E-TURN.