

Total quality and war on waste

uous enhancement through subsequent updates, up to the current system certified by the German institute Dekra according to ISO 9001:2000. Through the years, the Quality System certification based on the same standard has been gradually extended to most group companies, in Italy and abroad.

In these Metal Work organizations, the implementation, certification and subsequent visits for surveillance and renewal of the Quality Systems have been followed directly by the QAS department, which supports branch managers in the execution of the related activities with periodical visits. A significant role is played by internal auditing, performed by QAS and partially by each unit manager, as a tool for the continuous enhancement

of management processes in the subsidiary: the model defined by Metal Work is applied to all group companies. In 2000, Metal Work also certified its Environmental Management System (EMS) according to ISO 14001, both for system parts and for technical-legal matters, which are constantly updated. The management part of this System shares some aspects with the Quality Management System: therefore it was decided to integrate the two systems partially.

After the construction of a Occupational Health and Safety Management System, certified according to OHSAS 18001 in 2007, this year the QAS department has set the goal of integrating this system with the existing ones, and this operation will be completed by the end of the year.



SPC: an innovative method for total quality

Statistical Process Control (SPC) is a highly innovative quality control method and is one of the seven tools of "total quality".

Metal Work has adopted SPC to apply prevention rather than correction. Attention is focused on the process and the single machine tool, and not on the workpiece. Measurements are always carried out on the workpiece, but using a method that varies according to the production process.

The purpose is to stop the process before producing rejects. SPC allows to study the process statistically, determine its main features and monitor its evolution over time.

We have moved from attribute-based measurement (pass-fail) to variable-based instruments (digital micrometers with thousandth reading).

From a "compliant/non-compliant" part verification, we have adopted a control that allows to know the exact measure of the checked dimension and its trend over time. In this



respect we talk about "prevention": before the introduction of SPC, attribute-based control (pass-fail) allowed to stop the process only when the machine had already manufactured reject parts and their quantity only depended on the frequency of checks by

the testing person. With SPC, instead, you can act in advance and with a targeted action.

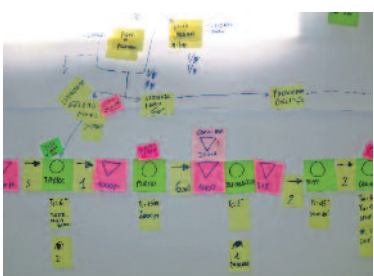
Another benefit of SPC is the huge quantity of data that industrialization specialists have access to in real time, through a PC network. So you can know the history of each production process, the working conditions, machine downtime, their causes and the actions undertaken to solve the problem.

It is a real data bank: an essential support for the research of new production technology, the organization of work cycles and the selection of optimal equipment and tools as a function of processes and expected quality.

The Kaizen project in Metal Work

Involving people by sharing goals, war on wastes (muda), continuous improvement achieved directly in the field (gemba), creation of a lean factory: this is, in short, the "Kaizen project in Metal Work".

There is one essential premise: spurring the enthusiasm and creativity of people in the continuous search for the improvement of business processes up to each single basic operation, and in the constant and immediate



KAI-ZEN means Changing-Better.

Application is based on three key principles:

- Process quality translates into result quality.
- Eliminate muda throughout the value chain.
- Don't judge, don't blame.

implementation of new standards that allow to grow and improve.

After an initial preparation class, the real operating activity started with the analysis of a specific product line. Setting up an inter-functional group, we designed the product-process matrix and the value stream of the entire production process, i.e. all the steps and stages that product components go through, with corresponding flow times and quantities, from raw material to customer shipment.

Subsequent observation and analysis highlighted the attack points, the so-called "improvement sites" to eliminate all operations with no added



value (muda), the improvement of technological and management processes, and the layouts.

All of this is directly activated and managed on the gemba, with the essential support of department staff and the systematic application of the Plan-Do-Check-Act method.

The site activity is under way and the method is being extended to all product lines, involving the whole factory.

