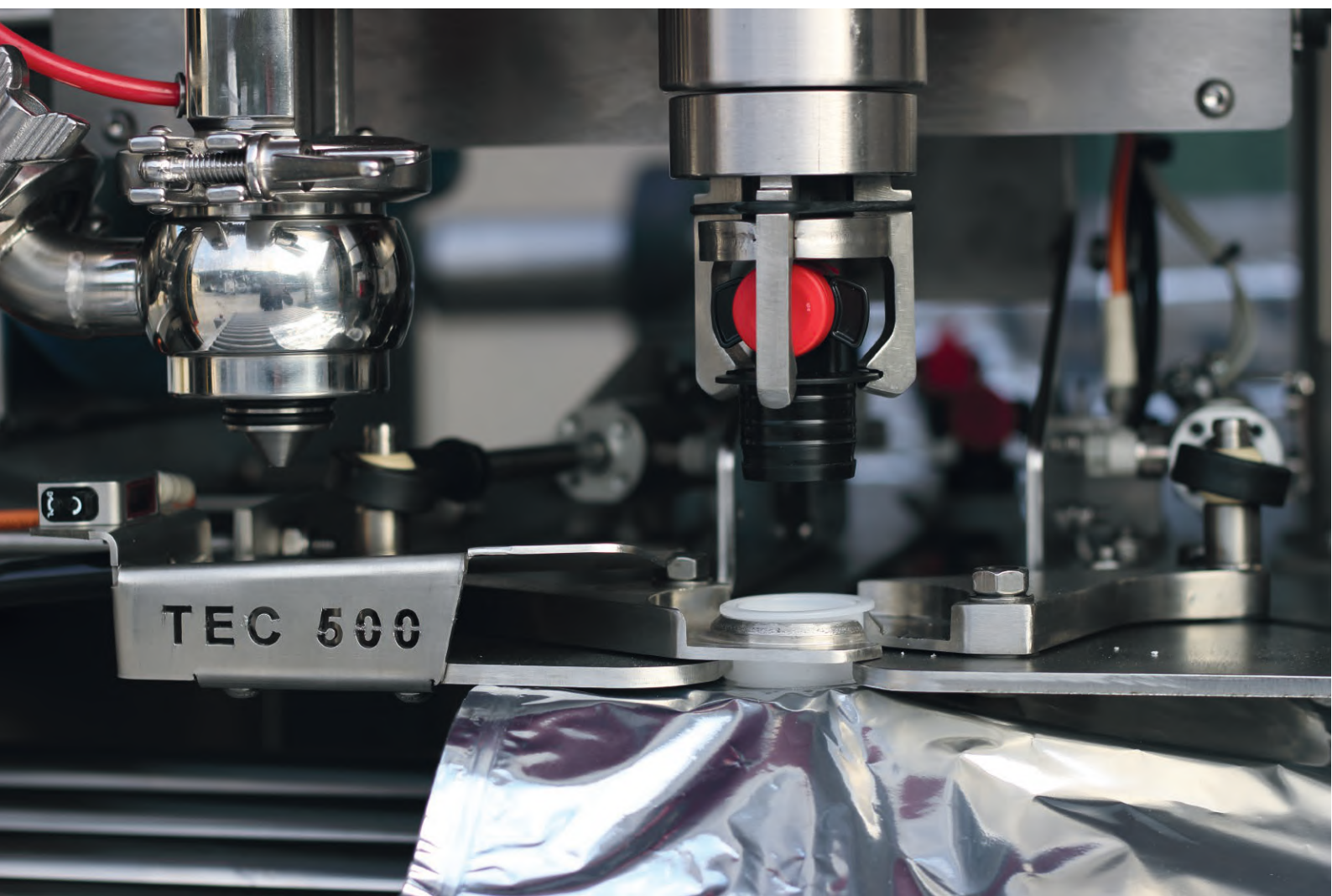


FÁBRICA METALÚRGICA DA GANDRA

PRODUCTION TIME REDUCTION, ERROR REDUCTION
AND INCREASE IN MACHINE COMPLEXITY



Fábrica Metalúrgica da Gandra (FMG) is dedicated since 1949 to the manufacture, commerce, and assembly of machines and equipment for agriculture, viniculture, olive oil production, and gardening.

A result of decades of experience, the company is prepared to offer full technical assistance to its developed and commercialized products. Their most recent bet is creating Gandra's Technologic unit, specialized in the connection and manufacture of highly complex solutions.



Challenge:

New means of creating more complex machines, that are modular and more versatile, help the company rely less on outsourcing for certain mechanical projects

Solution:

The implementation of the SOLIDWORKS Premium solution since 2010

Results:

- Mechanical projects are developed internally.
- Production times reduced by 85%
- Machines with higher complexity
- Project error reduction by 92%



Bag-in-box filling machine DOSITEC

FULLY FEATURED AND INTUITIVE TOOLS WERE THE REASON BEHIND THE CHOICE

Gandra Technology is dedicated to the connection and manufacturing of machines for the highly demanding markets, like the food industry, where quality control is tight, ease of cleaning and maintenance are a must.

One of the most relevant export projects were machines that would fill high viscosity products (in high temperatures) into a bag in box juice container (with fruit pieces), these would be exported to several countries like Austria, Belgium, South Africa, Guinea Bissau and Angola.

During the last 67 years, FMG is looking to modernize itself, acquiring the most advanced technical means, betting on optimizing their manufacturing processes and their custom fit solutions for clients.

Generally, machines in this market are very basic, but FMG tries to introduce advanced technology into its own machines. They adapt machines and products to their client's needs, respecting all the food industry requirements, like duct polishing, ease of disassembly fixture systems, plane surfaces for easy cleanup, while still being strong for easy handling and transport.

There is also the concern that the machines are visually appealing. The objective is that the client buys the machine for its functionality, but also for its external look. Good looking, functional and efficient.

Other software solutions were analyzed, some were considerably cheaper, but SOLIDWORKS was the right choice due to it having better features and being an overall more intuitive solution. Sheetmetal, Weldments, and Photoview are some of the most used tools in Fábrica Metalúrgica da Gandra.

"With SOLIDWORKS, we built more complex machines in a much shorter time"

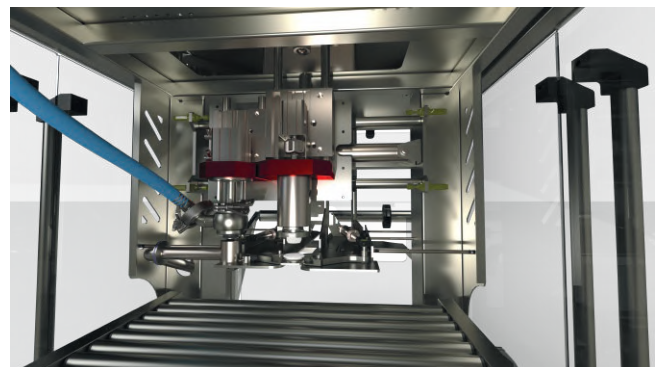
— Eng. Miguel Ribeiro, Project and Manufacturing Director

BENEFITS OF USING SOLIDWORKS

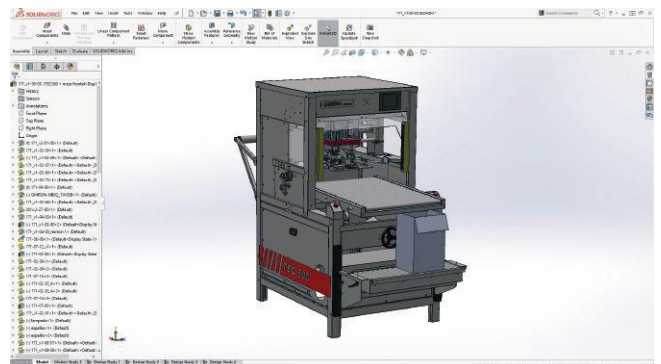
"There is a large difference between fabrication before and after CAD. The time a machine takes to be manufactured was reduced by 85%. Before introducing SOLIDWORKS it would usually take 6 months to accomplish something that now takes only one. There is also a complexity increase in the machines that we design, since everything is tested in SOLIDWORKS before going into production, this represents a 92% error reduction" - Eng. Miguel Ribeiro explains.

One of the most used tools on which we give more emphasis inside SOLIDWORKS is the Assembly Visualization, it allows us to give custom properties to each part related to the type of handling it will require, meaning, laser cut, compressed air, etc, and thus we are able to filter quickly in the part tree which parts to send to each external supplier or each production section.

In terms of organization of the diverse parts in each assembly, this tool helps so much in the project timings.



SOLIDWORKS Rendering - Bag-in-box filling machine TEC 500



SOLIDWORKS Project - Bag-in-box Machine - TEC 500

"When a machine's complexity rises, SOLIDWORKS helps us even more"

-Eng. Miguel Ribeiro, Project and Manufacturing Director

The repeatability is a key factor since it allows full CAD use and replicates parts needed in new machines or projects.

Everything that is manufactured is designed in SOLIDWORKS, from the most complex machine to the most basic part, and saved in its project folder.

To highlight some of the projects done by FMG in SOLIDWORKS, an isobaric filler was selected, on which the key part is the filling spouts. In the machine, the package needs the same pressure as the tank to proceed to filling. In this project, SOLIDWORKS was fundamental in the dimensioning of the filling spouts, conducts, valves, and in their verification and integration within the machine. "When we manufactured the filling spout, it was perfect on the first attempt" says Eng. Miguel Ribeiro.

There was a client that bought several machines, and plans on how each machine would be placed on the factory floor where needed, SOLIDWORKS helped a lot in this prior implementation planning on the client's facilities, predicting work areas, cable management, maintenance, etc.



"In all projects, SOLIDWORKS is fundamental. I look at SOLIDWORKS like it's pen and paper."

— Eng. Miguel Ribeiro, Project and Manufacturing Director



FÁBRICA METALÚRGICA DA GANDRA
VAR: ISICOM TEC - Engenharia e Automação Industrial, Lda. Portugal

Headquarters: Rua da Gandra, 145
4770-359 Mouquim
V.N. Famalicão - Portugal
Phone Number: (+351) 252 300 090

For more information:
www.fmgandra.com

FUTURE

The company intends to keep its growth, enter new markets, increase exports, and specialize further in filling systems, isobaric lines, more complex food line fillings by weight, instead of flowmeters.

The evolution of the SOLIDWORKS solution goes through the potential acquisition of SOLIDWORKS Composer, SOLIDWORKS Electrical, and SOLIDWORKS MBD. Value is given to aesthetics, and in that field, SOLIDWORKS Composer is the most wanted tool in the short run.

SOLIDWORKS Composer is the indicated tool to take care of the aesthetics part of products, creating maintenance instruction manuals, this way they will reach bigger companies, that give more importance to this kind of graphical details. With quick user manual creation, client handling errors can be reduced as well.

They also intend to integrate the machine electrical project with the mechanical project using SOLIDWORKS Electrical.

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