

PRESSING DEEP DRAWINGS WITH COMPLEX SHAPES

THE TURIN-BASED COMPANY TRALE USES CERTAIN HYDRAULIC PRESSES MANUFACTURED BY F.LLI NAVA TO PRODUCE COMPONENTS FOR CARS IN HIGH RESISTANCE STAINLESS STEEL SHEETS. THIS TECHNOLOGICAL EQUIPMENT ASSURES RELIABILITY, ENERGY EFFICIENCY AND HIGH PRODUCTIVE PERFORMANCE.



Quality and innovation are the prerogatives of Trale Srl, a steel manufacturer that has conducted business in the field of sheet steel components for more than 45 years. Since 1971 it has processed sheet steel and performed cold pressing, assembly and welding, besides prototyping and construction of moulds in its production facility based in Roletto, in the province of Turin. «This activity is mainly centred on the production of a small collection of stainless steel items for motor vehicle silencers and

exhaust pipes, besides elements for frames and high resistance steel underbodies intended for various operative compartments,» says Renato Zappa, the owner.

Specifically, the company is a landmark for the production of exhaust system components (hot and cold section). Clients request support and development during the various operative phases. Trale provides active synergistic relations and effective support from the initial phases of every project to ensure economic optimisation of the component to be produced. Even the machines and technologies adopted play a decisive role from this point of view. To offer a high quality process and excellent standards of competitiveness, the Management recently decided to increase the number of its hydraulic presses by adding new presses produced by F.lli Nava, precisely one 250 ton press for drawing with 110 ton bottom sheet press, and a 110 ton press for drawing with a 50 ton bottom press.

REDUCING BOTH SCRAP AND THICKNESS FOR PROCESSING

«In an increasingly competitive market, it is important to stand out for the production of complex components made of materials that are not easy to process, as in the case of ferri-

tic stainless steel AISI grade 4, which is recurrent in the items we produce. Its peculiar intrinsic characteristics make it hard to process,» says Zappa. Aisi grade 441 is a very hard steel to process, but Trale has always used the experience acquired to perform highly skilled processing, providing the main actors of the automotive sector with absolutely high quality components. These actors have found in Trale a reliable partner they can contact. «Deep pressing of difficult shapes for components with 0.5 to 2 mm thickness that are not easy to process,» says Zappa. The use of F.lli Nava's hydraulic presses ideally fits into this context because the ongoing variability of their parameters during the pressing phases (drives and reactions) yield the best results in terms of reduced production of scrap and finer thickness.

ENERGY EFFICIENCY AND HIGH PRODUCTIVITY

Already equipped with Nava presses, Trale decided to purchase two new machines: one hydraulic press for drawing, model 2MI 250/110, with 250 ton hammer force and 110 ton bottom sheet press; and a hydraulic press for drawing, model 2MI 110/50, with 110 ton hammer force and 50 ton bottom sheet press. The strict

constructive parameters of both machines confirm all the mechanical and hydraulic features and traits that distinguish Nava's pressing solutions. The energy saving solutions of the press limit consumption to the actual demand for production. On the other hand, the manufacturer has long insisted on the importance of energy-related aspects even when training the client's personnel, building their awareness of the impact of work cycle regulation on machine production costs (especially direct consumption, duration and mould consumption). Personnel assigned to perform pressing have thus been specially trained by the corporate Management with the precise intention to extend the delegation of competencies as far as possible, spanning management of press equipment, work cycle settings and pressing quality checks directly on the machine. The scope of this approach is to create work islands that are, as far as possible, streamlined, flexible and self-sufficient, islands that ensure all-round quality and added value for the pieces produced. Both presses have the latest process control update, which is capable of implementing exceptionally flexible adjustments to the work cycle, and of monitoring the critical process values in order to stop pressing when deviations are observed from the work plan for the mould in production. Nava has produced machines with some interesting devices, for instance, they have insertion points for damping cylinders for the impact of slicing or balancing the asymmetrical load in the mould, and a modular software to add special working cycles or processing phases with the closed mould, monitoring the correct programmed progress of the sequence of intervention/return phases of the actuators. Particularly, this function allows to obtain a complete piece with just one

mould, thus optimising productivity and rationalising the flow of pieces being produced. We must also mention the software to trace the pressed pieces, with a log for subsequent analysis in order to assess productivity (consistency of final invoice/estimate), while a further development consists in recording the history of significant process values for a subsequent technical analysis of the quality of the pressed pieces produced.

ONGOING TECHNOLOGICAL INNOVATION

Technology, know-how and operative flexibility are the main distinctive traits of the company, which accepts production requests for small and medium series of sheet steel items with difficult shapes (ca. 700x900 mm). «We work in a highly competitive sector in which the overall focus on the product development cycle and final quality is essential. The two new presses were purchased with this in mind, precisely to adopt adequate tools to consolidate the position acquired in almost 50 years of corporate history. We consider the manufacturer's energy efficiency, productivity and reliability remarkable added value for the new machines that will join another two Nava presses of 250 tons and 350 tons, respectively, which have already been operating in our facility for a long time,» says Zappa.

ALMOST HALF A CENTURY OF SHEET STEEL PROCESSING, MOULD CONSTRUCTION, PRESSING AND ASSEMBLY

With head office in Roletto (TO), Trale has conducted business in the field of sheet steel components since 1971, performing pressing up to 400 tons, assembly with welding, and construction of moulds and prototypes. An ISO 9001-2008 certified company, over the years Trale has acquired ex-

tensive experience in niche processing for the production of components, which are produced in stainless steel, mainly for the automotive sector, and which feature deep drawing and complex moulding. The company counts a workforce of ca. fifteen employees who are assigned to production, but also to designing and producing equipment. In order to guarantee a high quality process, Trale also makes use of the collaboration of an external qualified technical department that uses cutting edge CAD/CAM systems, Moulds and control gauges are built externally, and controlled and certified inhouse. With this absolutely high quality approach to order processing developed during 45 years in business, the company counts among its major clients leading manufacturers of components for the automotive sector.