

More competitiveness thanks (*also*) to deep and very deep drawing



The new moulding press delivered and installed by F.lli Nava is part of a major investment plan in process technology carried out by STL over the last five years



Ing. **Giuseppe Manzoni**
STL owner

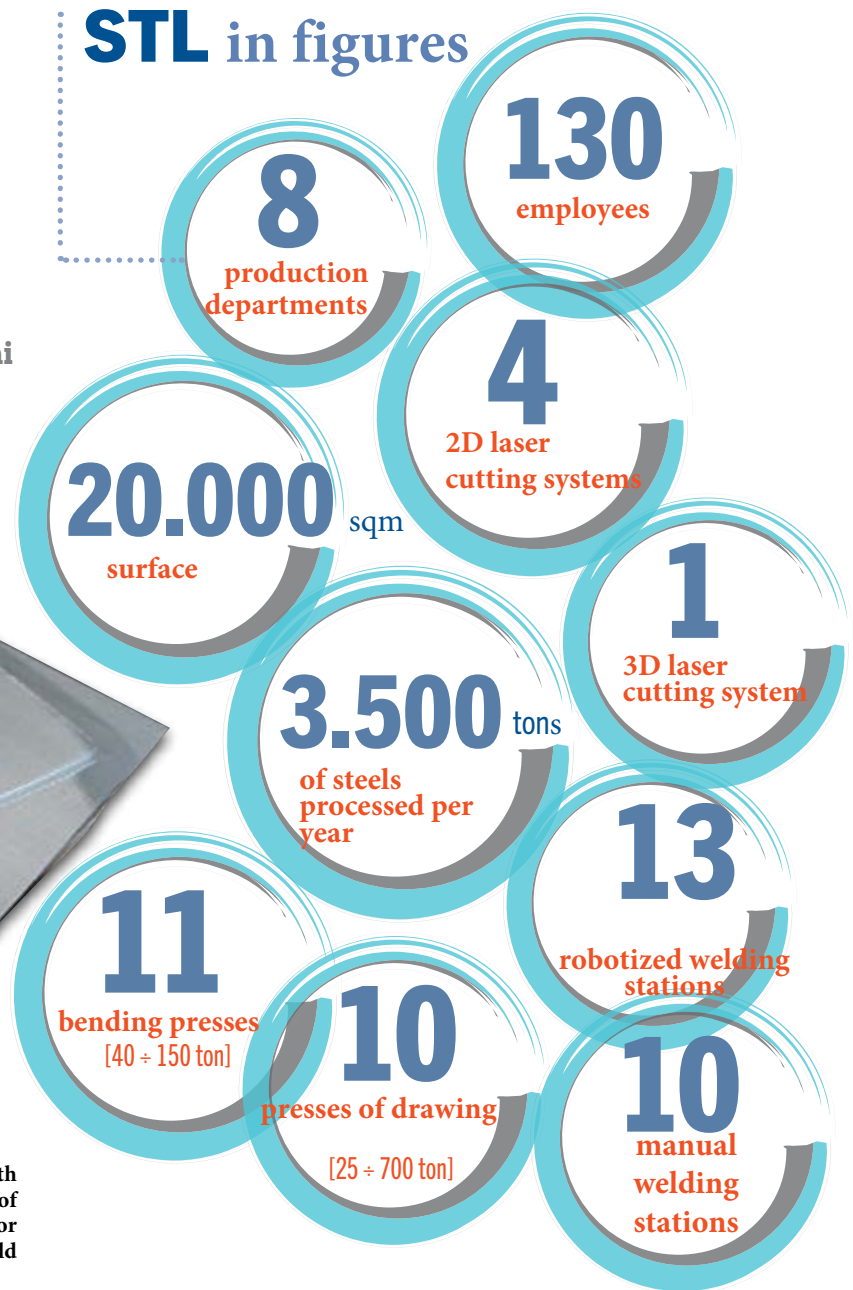


Dott. **Marco Manzoni**
STL owner



STL boasts an in-depth specialization in the production of pre-drilled sheet metal grilles for the tractor world

STL in figures



STL'S DIVERSIFIED TECHNOLOGY ALLOWS IT TO PRODUCE STEEL COMPONENTS, ASSEMBLED AND PAINTED FOR VARIOUS SECTORS, INCLUDING AGRICULTURE AND AIR MOVEMENT, PROVIDING A COMPREHENSIVE, COMPETITIVE AND QUALITY SERVICE. THE COMPANY USES A NUMBER OF F.LLI NAVA MOULDING PRESSES, INCLUDING A RECENTLY INSTALLED 250-TON PLANT

Industry 4.0 has profoundly permeated the industrial fabric, by having redefined production processes and the approach to new challenges in the manufacturing sector. The sheet metal processing sector has also been significantly transformed by this digital revolution, representing, for many companies that have recognized its importance, a decisive turning point for their businesses. This transformation and evolution is not limited to large and more structured production facilities but, above all, to small and medium-sized enterprises. As for STL based in Lurano (BG), a company specializing in the processing of sheet metal, rods and tubes, which in the last five years has made a real change from an operational point of view, made even more challenging by the rich technological equipment it has acquired over time.



The main sectors served by STL also include agriculture and earthmoving, for which it manufactures panelling, ladders, hoods, gratings, frames and cab structures

"Our facility - comments one of the owners, Giuseppe Manzoni - offers a complete and very flexible processing cycle because of the presence of several departments that internally include efficient and advanced technologies. This allows us to guarantee our customers finished, high-quality products with very competitive timelines." We are talking about customers from the predominantly agricultural and earth-moving sectors (for which the company produces panelling, ladders, hoods, grilles, frames and cab structures), in addition to the no less important and fast-growing heating and air conditioning (with the production of components for gas, air or water gas generators such as panels, hoods, impellers) and air movement (nozzles for air/vacuum pumps, hoods, fans). "In addition to Italy - notes ing. Manzoni - which accounts for around 45% of our turnover, the countries in which we operate are Germany, for a share of 35%, and the remainder in the rest of Europe. It should be kept in mind, however, that also what is produced for the Italian market is then almost totally exported abroad."

A high score of 8 to productivity

STL has organized its operations into 8 production departments, where steel is transformed from raw material to finished product, for a total of about 20,000 square meters of covered area in which a staff of 130 workers operates, with a processing capacity of about 3,500 tons of sheet metal per year. "We are able to process in shear - explains ing. Manzoni - material thicknesses between 1 and 20 mm. With respect to types, we range from DC01 steel sheets up to DC04, while as far as mesh is concerned we arrive at DC06, processed

however, only to a thickness of 1.0-1.5 mm. We then process galvanised steels in the range of 1 to 4 mm, in DX51D and in various coatings as required by the customer, while the most common materials range from DD11 to S420". Sheets are cut on 4 laser systems, turned or moulded as required. "Central to laser cutting systems - explains ing. Manzoni - is our twenty-tower sheet metal storage warehouse, with 700 loading bins and about 40 unloading bins. Next are the bending departments, for processing that can be done "in the air" with a dozen bending presses from 40 to 150 tons, and with bending from die, then deep drawing, at the moulding department, with a fleet of presses from 25 to 700 tons. Where necessary, the part can then go to the two welding departments: manual welding, where there are about ten certified operators, or robotic welding, a department where there are currently no less than 13 automated islands. All this is then finished by our in-house powder coating plant". It is worth mentioning that since last year, following the acquisition of a share in one of its suppliers, Vertek of Canonica D'Adda (BG), STL has expanded its production cycle by integrating, in addition to powder coating, the cataphoresis treatment, which is fundamental and strategic in the tractor sector and similar sectors, for which the company boasts major groups worldwide among its major customers. "The whole thing - emphasises ing. Manzoni - supported by a tool shop that provides our experience in designing and setting up moulding and bending equipment, as well as our expertise in designing and manufacturing automated welding jigs".

Reliability, performance and quality are still convincing

Prominent in STL's moulding department are three presses acquired from F.lli Nava: a 700 ton, a 500 ton and, the latest installed, a 250 ton press, as consolidation of a partnership with the Monza-based manufacturer that began almost thirty years ago. "A cooperative relationship - recalls dott. Marco Manzoni - who is also one of the owners, together with his brother ing. Giuseppe Manzoni - started in the early 1990s with the first delivery of a 350 ton press, 2,000 x 1,500 mm plates, which was followed by others, up to the most recent one, as a replacement for a machine of another brand that had become obsolete". It was in fact the company's founder, Mariolino Manzoni, who recently passed away, who appreciated the reliability, performance and technological quality of the machines made by F.lli Nava. "Given the good ratio and the convenient validity of the solutions used - continues dott. Marco Manzoni - after careful evaluation and comparison of what was available on the market, we decided to resort to the same manufacturer in this case too, acquiring a machine with a size well calibrated

WHEN THE PRESS SPECIFICATION MAKES THE DIFFERENCE

The new F.lli Nava press installed at STL has a maximum ram force of 2,500 kN, lower blank-holder 1,250 kN, working plates of 1,600 x 1,200 mm. With these special features, the system was created as a solution to the special requirements of deep and very deep drawing, aimed at a superior market segment, such as the segment in which STL itself operates. A segment where the press specification can make the difference, resulting in the production of parts with constantly controlled quality and high performance, so as to meet both the objectives imposed by the strict standards of the markets in which the products are manufactured, and the expectations of performance, adaptability and rapid set-up. In order to push the

evolution of mould technology as far as possible, meeting the increasingly advanced needs and increasingly lower price targets demanded by the high-end industrial sectors, the machine is designed with a fully controllable third effect with a very high force compared to the force required for part extraction alone. This allows, on the other hand, the creation of pre-drawings in order to recall the material to be processed at later stages of the process. The press is equipped with a ram with adjustable maximum force and guided with a high ratio (between guiding height and plate size), which ensures the best result for eccentric forces if they would develop in the mould due to the asymmetry of the workpieces to be produced.

In addition, the machine has a blank-holder pad with a flexibly adjustable reaction force throughout the entire cycle to meet the requirements for holding or sliding the sheet metal depending on the different areas of the mould. In terms of the human-machine interface, further efforts have been made by the manufacturer towards diagnostics that are increasingly closer to the operator. In order to facilitate the mould set-up task and the adjustment of the optimum parameters to be selected for producing the desired part, the press control was implemented with the addition of graphic pages illustrating the trends of the process values as they evolve during moulding.

F.lli Nava's new press installed at STL ensures a maximum ram force of 2,500 kN on a 1,600 x 1,200 mm working plate, with a 1,250 kN lower blank-holder



for a very strategic type of production for us today. I am referring to a whole range of masks for the tractor industry". The new press (with a maximum ram force of 2,500 kN, lower blank-holder force of 1,250 kN, working plate 1,600 x 1,200 mm) was installed last year and is part of a major investment plan in process technology carried out by STL over the last five years. "In 2018 - specifies dott. Manzoni - the company embarked on a path of major internal change. The challenge was to deal with an internal reorganisation, both from the point of view of production flows and resources".

Co-design and co-engineering, from design to assembly

From 2018 to 2022, STL invested more than 5 million Euro in new technologies. A major evolution towards Industry 4.0 still to be completed, but which gave the company the opportunity to progressively improve and optimise production capacity and increase competitiveness. "As far as the just-concluded 2023 is concerned - dott. Manzoni himself points out - we have invested a further 2 million Euro, integrating 4 new robotic islands, a new

bending press, and a new punching machine, in addition to the aforementioned new moulding press from F.lli Nava. The purchase of a neighbouring plant was a further investment, which was a decisive factor for finalising our operations".

The goal pursued was the achievement of being able to manufacture products from sheet metal, processed in all their parts and assembled. With acquired skills. Starting with design. "In this regard - intervenes ing. Giuseppe Manzoni - the technical and design department has grown from 2 to 8 qualified personnel in just a few years. This now makes it possible to provide an even better and accurate customer support and coaching service. Right from the initial stages, with collaboration and co-engineering activities, aimed at research and continuous monitoring of their cost saving". This approach is also successfully applied in assembly. "With reference to assembly- emphasises ing. Manzoni - is not, however, to be understood as an all-round generic approach, but with specific competences, for example in relation to the needs of the agricultural and tractor sectors. What also makes our service different is our ability to design and produce all assembly jigs in-house".



At its production site in Lurano (BG), STL uses, in addition to the newly installed 250-ton press, two other F.lli Nava 500- and 700-ton presses

The added value of deep and very deep drawing

The new moulding press acquired from F.lli Nava is also part of STL's precise desire to provide an increasingly better and more competitive service to the aforementioned agricultural and tractor sectors.

"A key product in this area - confirms ing. Manzoni -

are the grilles, i.e. moulded components at the front and sides, of the tractor, which are indispensable for the passage of cooling air. These are pre-drilled sheet metal grilles about which we specialise in two aspects. One concerns the moulding phase, because grilles moulding is notoriously complicated due to the behaviour of perforated sheet metal, which is different from solid sheet metal. A further aspect concerns the mould itself, as our company began its business by making its own moulds in-house. Experience which allows us to design them to the best of our ability, aware of the moulding phase and its requirements, to follow their construction to our own design relying on qualified external suppliers, and then to start production".

All this know-how and reliable, high-performance presses at greater moulding depths undoubtedly sets the company at a privileged level with high growth potential.

"We believe that we are able to produce a product - says dott. Marco Manzoni proudly- for which the company can propose itself as a more cost-effective and flexible alternative to much more structured companies of a much larger size than ours. Without neglecting our expertise in knowing the type of plastic, be it Telene, LFI, SMC, RIM etc., and knowing how to design and adapt the grid. This makes it possible both to optimise the mesh fastening on the bonnet and mudguards and to avoid critical issues. And thus lowering costs". If F.lli Nava's new deep and very deep drawing press proved to be essential for the production of these grilles, the acquisition of Vertek, with its more than 15 years of experience and the expertise of a staff of almost 50 people, is also indispensable. for the possible treatments also for the salt spray resistance part.



For the air movement sector STL manufactures various components, including nozzles for air/vacuum pumps, compressors, hoods and fans

The added value of expertise and diversification

As a result of the significant investments made in recent years, STL has also recorded significant growth in sales year-over-year, with 2023 sales reaching over 20 million Euro. What are the expectations and new challenges for the future? "For the future - dott. Marco Manzoni concludes -the keyword and objective for STL must be diversification. This is to counteract any trends

ups and downs of the market and, above all, to grow in other skills. Another focus will be to follow our customers ever more attentively, in view of the high level demanded by the large industrial groups we address, continuing to focus on the expected quality, acting even more as partners.

This is also why we will continue to support and develop the skills of the engineering and design department alongside the production side. Other sectors in addition to agriculture and tractors will also benefit: for example, the ventilation sector, in which we are experiencing great satisfaction and foreseeing interesting growth opportunities for the future". These opportunities and growth with high added value are due to STL's partnership with the aforementioned Vertek, and the potential of its subsidiary Matra, a company that started out as an expert in punching, bending and moulding, but over time has also implemented laser cutting and manual welding operations, in turn completing the production cycle.