

FROM SAYING TO DOING

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Inclusive technology for deep and very deep drawing

THE INTEGRATION OF A NEW HYDRAULIC PRESS BY F.LLI NAVA HAS ALLOWED PERONI STAMPI LOCATED IN BRESCIA TO FURTHER EXPAND ITS RANGE OF MACHINES AND, AT THE SAME TIME, TO BROADEN THE TYPES OF PRODUCTS THAT CAN BE MANUFACTURED



From the small lock cover for handles to the much larger crossbar for commercial vehicles, through components for cruise ships to various versions of profiles used for photovoltaic panels. These are only some of the types of products that Peroni Stampi, a company that since 1974 has been involved in the construction of moulds for cold deformation (blanking, bending, transfert, progression), a business that was later integrated with the forming sector. «This last activity - confirms Mirko Peroni, the second generation at the head of the company together with his brother Alessandro - became necessary as a natural development for a mould manufacturer, not only to manage pre-series productions directly within the company, but also to carry out ad hoc testing of the equipment designed and manufactured.

This is the reason why, in agreement with our father Valentino, in 2002 we decided to install our first press, to which several others were then added over time». The company has grown from its first 600 sqm premises to a much larger production unit in Castegnato (BS): more than 3,000 sqm covered, 600 sqm of which are dedicated to the tooling department, while the remaining 2,400 sqm are used for the administrative offices, the Cad/Cam design and CNC programming technical office, and the moulding department. «A department - states Peroni - where today there are 11 machines with powers ranging from 40 to 450 tons. The most recent arrival, not more than a few months ago, is the one with the highest tonnage: a new high-performance hydraulic press purchased from F.lli Nava in Monza, just outside Milan».



The new F.lli Nava hydraulic press is able to deliver 450 tons of force, in addition to having a 200-ton blank-holder, that consists in a single table with 4 adjustment points freely programmable electronically



View of Peroni Stampi's moulds and equipment warehouse



Peroni Stampi appreciates in particular, not only the significant performance, but also the user-friendliness of the new F.lli Nava hydraulic press



Peroni Stampi is well equipped to mould various types of products, from the small lock cover support for handles to the much larger crossbar for industrial vehicles

Always ready to meet even more stringent requirements

The 450-ton hydraulic deep and very deep drawing press is a new machine designed and built by F.lli Nava that complements Peroni Stampi's already well-stocked range of mechanical technology solutions.

«We have decided to include a hydraulic press – explains Peroni – in order to meet the growing demand for increasingly challenging forming operations. If, in fact, mechanical technology machines respond perfectly to the needs of more traditional blanking and bending jobs, it is much more complex to meet more stringent requirements. This led to the decision to finalize this new purchase, also facilitated by the incentives and tax benefits in place related to Industry 4.0».

The decision of the Brescia-based company to assess market's availability goes back to the last year, and it identified F.lli Nava as the ideal partner.

«We have chosen Nava - emphasizes Peroni - for several reasons. Not only because of the company's history and experience in the sector, but also because of the positive feedback received from some customers who have been using this manufacturer's technology for several years. In addition, when we visited their premises we were able to see very closely how the presses are made and their specific features. From this point of view, we were positively impressed by how, at a glance, the machines are able to show all their strength. An important factor in itself, because having a robust press means obtaining a more precise component and having a greater durability of the moulds».

A positive feedback, however, not totally free from doubts that Peroni Stampi, relying on its experience on mechanical presses, pointed out to the manufacturer.

«I confirm - recalls Peroni himself - our initial doubt about the possible lower stroke rate of a hydraulic press, as it is more specific to certain sectors, compared to a classic mechanical press». The technical staff of F.lli Nava, coordinated by one of the owners, Eng. Andrea Nava, answered and solved these legitimate doubts by providing an accurate comparative simulation of what would have been the cycle times and the relative performances offered by the chosen press configuration.

«The results of the simulation - comments Peroni - which were then fully confirmed directly at work, met our expectations, removing all doubts and confirming the validity and suitability of the choice proposed to meet our production requirements».

Maximum quality, performance and flexibility

The tool and mould making department at Peroni Stampi serves internal needs for 30% and external customers for the remainder, while the moulding activity accounts for about 65% of the turnover (which in 2021 is expected to reach about 1.5 million Euro); this latter figure emphasizes the strategic importance of the new investment.

«The new Nava press - confirms Peroni - represents a real feather in the cap for the department. The investment has made it possible to further expand our technological portfolio in a niche sector, that of deep drawing, that offers interesting opportunities to succeed in gaining further market differentiation. Moreover, we must not forget that the hydraulic press represents the start, the phase in which the piece is formed. A piece that, in order to be finished, may also need subsequent blanking or trimming phases.

So, in turn, the machine's output can also act as a driver to transfer a workload to our other mechanical presses».

As already pointed out, the new press is able to deliver 450 tons of force, as well as having a 200-ton blank-holder i.e. a single table with 4 freely programmable electronic adjustment points. Equipped with a cushioning system of the blanking stroke, among the other functions implemented, there is the parallelism reading check (the pressing cycle is continuously monitored in order to check for out-of-plane skidding). Therefore, depending on the customer's settings, it is possible to implement a conservative alarm to prevent the continuation of the cycle. The features from the point of view of Industry 4.0 are just as comprehensive, with a wide range of data available, thanks to software specifically developed by F.lli Nava itself. «I believe that the flexibility - notes Peroni - of the software is a further strong point of the press, in addition to performance and product quality, with convenient options within reach of operators who do not necessarily have to be programmers. Messages and commands to be entered are few but effective, speeding up the whole process, as well as its complete control thanks to the possibility of adjusting all the various parameters of the press down to the smallest detail: from forces to strokes, to the straighten-



Mirko Peroni (left), the second generation at the head of Peroni Stampi together with his brother Alessandro (right), and his father Valentino, the company's founder

ing balance. Since our work involves particularly single-cycle and manual moulding, we also appreciate another strong point of the software, namely the presence of the double piece sensor which, by means of its calibration, protects the moulds from overloads deriving from a double sheet accidentally left in the mould, or from greater thickness/material than expected».

Peroni himself also reiterates the appreciated and mentioned functionality of reading the parallelism of the moulding, considering its use not only with single mould but also with multiple moulds, to produce components that require multiple phases: «If, for example, we insert four different moulds - he comments - we know that normally they do not all require the same force, nor the same blanking stroke. The software indicates the areas where

TAILOR-MADE AND CUSTOMISED MOULDING TECHNOLOGY, WITH HIGH ADDED VALUE

The new F.Ili Nava hydraulic press for deep and very deep drawing, installed at Peroni Stampi, has immediately proved to be as high-performing as flexible, and able to adapt to the most varied operating requirements. These features are also found in the software management, for which the manufacturer has developed an ad hoc application, perfectly aligned with Industry 4.0.

«Our choice - explains Eng. Andrea Nava, one of the owners of F.Ili Nava - was not to re-adapt the MES systems available on the market, although they are advanced, but to design an environment with a specialized perspective for our presses. Therefore, it is designed for a very focused collection of the technological cycle data, useful as operational documentation, but also as a database for all process and productivity analyses. A verticaliza-

tion that is widely and positively appreciated by our customers».

The software of the press, on the other hand, is developed to allow very thorough tracking and monitoring actions, also in case there is any need for targeted diagnosis. «In addition - says Eng. Nava the data collection that feeds a SQL database useful for the analysis of plant productivity, is also used in other ways: analysis of the technological cycle, analysis of the duration profile and performance of the moulds. In short, the system collects the essential data to allow more development keys and, in addition, it was designed as a multiple press, so we are talking about a server that can host several machines. The more machines are connected, the more powerful the data tracking becomes». Equally appreciated by Peroni Stampi are other specific operating procedures, developed

in the logic of integration to make the moulding more complete. Moreover, F.Ili Nava has and can develop further specific solutions for other types of use, such as third effects integrated in the ram, or the plate press, which can be either a single table with several independent adjustment points or have several separate tables.

«We also provide additional functions - adds Eng. Nava - in order to carry out closed moulding operations so as to guarantee the best result. It should not be overlooked that in case more than one passage in a row is required, and these passages are similar also in time, we would obtain a further second-order technological benefit: the part is a bit more "warmed up" by the mechanical deformation of the previous phases, so that the forming of the following phases is easier. This is in addition to the major advantage



Eng. **Andrea Nava**, one of the owners of F.Ili Nava of Monza (MB)

of not having to carry out intermediate storage and subsequent resumptions». It seems clear that the great specialization of F.Ili Nava consists in being able to design and manufacture specific presses for each sector, for each user, with a tailor-made and customized technological production with high added value.

there is greater pressure allowing us to adjust through the correction of certain parameters and the use of special balancers, perfectly compensating the possible misalignment. The result not only concerns the quality of the component, but also the protection of the mould and the press itself».

The objective is growth, continuous and in small steps

The wide range of products that the Brescia-based company is able to manufacture for third parties corresponds to an equally wide range of sectors served, with a broad and articulated customer portfolio.

«As a matter of fact - points out Peroni - in the last few years we have been noticing that about 60% of the products we manufac-

ture go into the industrial, commercial and agricultural vehicles sector. A segment that, compared to automotive, has fortunately always been less affected by market fluctuations».

This diversification, together with the other sectors served, has protected the company from the well-known critical situations that the automotive sector has experienced.

«Except for the global slowdown experienced in the last two years - concludes Mirko Peroni - the trend is definitely positive for us. We aim at continuing to grow, progressively but in small steps, trying to continue expanding the available technologies, as we did with the purchase of the new hydraulic press from F.Ili Nava. But also to be able to invest in new personnel, unfortunately not always easy to find. Today, our group consists of a dozen people, a very young and committed team, who have a great desire to continue with passion to offer support in the mould construction field and, above all, in sheet metal moulding».