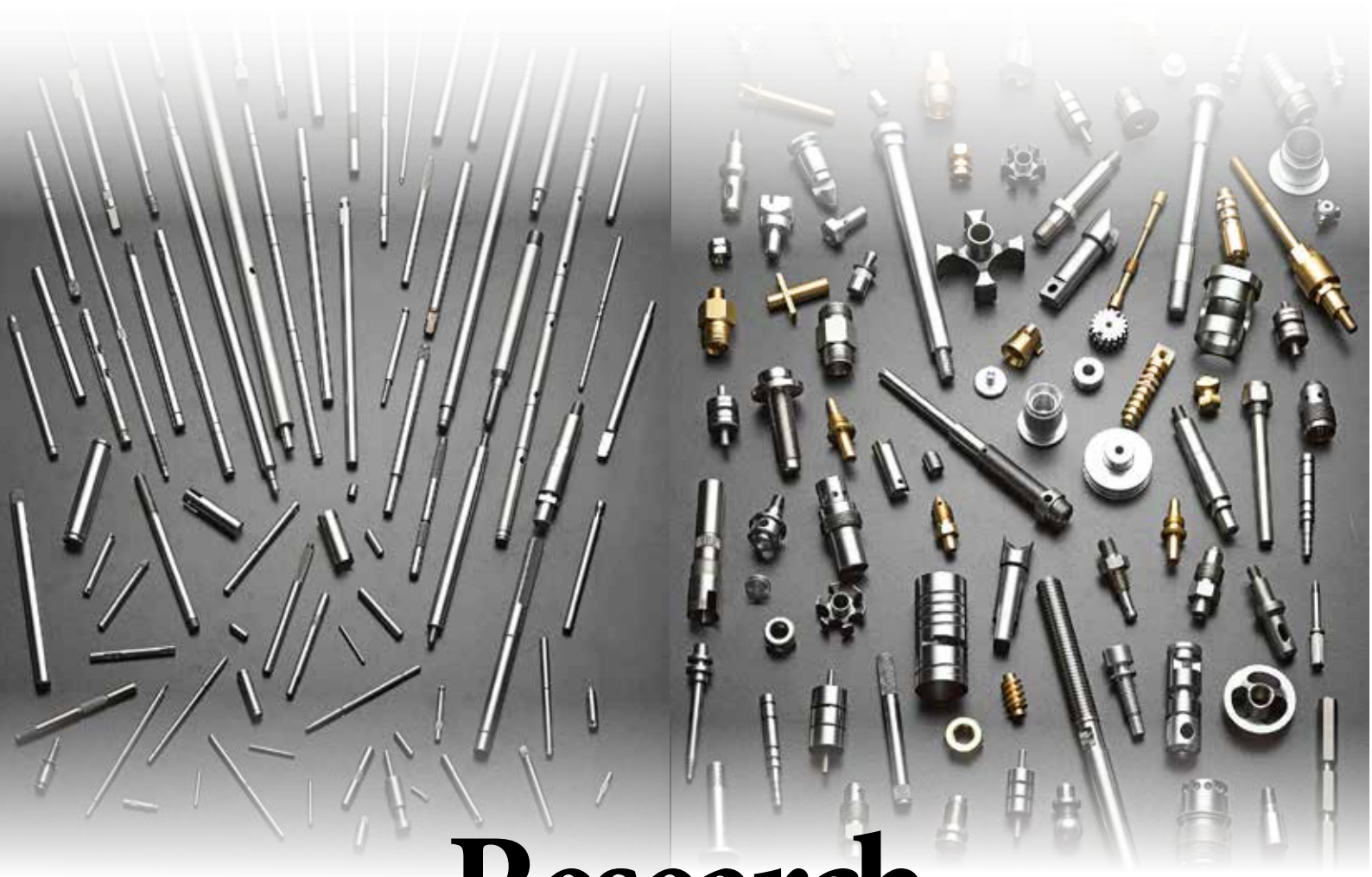

Stefano Belviolandi

Research and cooperation: the winning combination

Riccardo Pessina, general manager of Monzesi, and Paolo and Francesco Cardinali, owners of Ilmec, explain how the market of the grinding machines is changing. After having purchased the centerless grinder MONZA 620 Ilmec increased by 50% its production of shafts. The reason lies in a successful cooperation between the two companies.

A close synergy of strength and quality: this is the key of the success of the partnership between Monzesi, with its historical division of centerless grinders Officine Monzesi, and Ilmec of Osimo, the company which depicts itself as follows: "Third-party finishing work and assembly on turned and pressed metal parts." We met Riccardo Pessina, general manager of Monzesi, and Paolo Cardinali, owner of Ilmec, a 40-year-old man who in 2002, together with his brother Francesco, founded Ilmec, which in 15 years has become one of the leading companies specialised in the production of shafts.

Cardinali brothers started from scratch: Paolo had an experience in the quality control and today he is responsible for business organisation, while his brother, once surveyor, is now programmer. Cardinali's words on Ilmec transmit passion and optimism: it has been years of sacrifice with satisfying results which allowed Ilmec to compete on the market in a healthy way. "During the first years we focused on samples, we invested on equipments in order to complete our machinery park, we bought a heat treatment furnace and a grinding machine for surface finishing operations. In this case we opted for a Monzesi grinding machine" explains Cardinali. The reason why Ilmec decided to rely on Monzesi is clear. "First of all because Monzesi is an Italian manufacturer, secondly because of the positive word of mouth on Monzesi among our competitors."

A BIT OF HISTORY

Since its opening Ilmec has seen a growth in its turnover (except for the year 2008 with a loss of 5% due to the economic crisis which impacted the world economy) and, consequently, in its investments in increasingly higher performance equipment. "We can count on a modern cutting-edge structure of 1700 m^2 with plants of the latest generation which allows us to work all kind of materials with a diameter from 3 to 42 mm

Today 50% of Ilmec production concerns turned small parts, while the other 50% is represented by engine shafts and electric micro motors aimed at the electrical appliances and at the automotive, pneumatic and oleo dynamic sectors. For over 11 years the company produces about 1 million shafts a month and in some cases it boasts a free-pass status, in other words the possibility to avoid the qualitative control as acceptance by the client. In addition, Ilmec has had a significant increase in its machines and control equipment: "Quality is without any doubt our greatest strength and this is the reason why we invested 200.000,00 Euro in control tools and equipment. Ilmec is an ISO 9001 certified company according to TUV regulations, it also invested in an IT system (monitoring, production progress and controls recording in all production stages). We are able to maintain traceability of the raw material and to examine constantly the manufacturing requirements. We grew up by purchasing Monzesi's grinding machines 500 and 510 model, but it was no longer enough. We pushed our luck focusing on Monza 620 model in order to increase our performances".

Monza 620/350 CNC2 grinder with gantry loader and Monza 620/350 CNC2, with gantry loader and laser gauge.

Riccardo Pessina, Monzesi General Manager.

Paolo e Francesco Cardinali, Ilmec C.E.O.s.

MONZA 620: ILMEC FINAL GOALS

An always greater productivity and a total control of the pieces. In the first case this happens "thanks to a larger grinding wheel which allows to grind the shafts in a quicker way through a single through feed and to a wider external diameter of the wheel of 610 mm. This leads to a longer dressing interval which improves efficiency by 80 and 90% with an increase in the production by 50%" asserts Cardinali. In the second case the quality check of the work pieces takes place through a post-process laser measuring system. After measuring the small parts, this system transmits any discrepancies in the shafts' diameters to the machine, which automatically manages itself according to the standards. Pieces which do not respect standards, because of their wider diameter, can be reworked with no longer discarded material costs. The CNC software has been studied according to ILMEC's needs in order to maximise the productivity of the machine: Cardinali pushed for the automatic turn on of all the machine's functions, in addition to the turn off of the same ones. On Monza 620 it has also been installed a constant-steady speed, which provides the new as well as the old grinding wheel the same peripheral speed maintaining unchanged the quality of the grinded parts. This software is also characterized by an archive with all the articles so that the machine is able to load independently the right dressing program. A technical sheet, which comes directly from the dressing program, gives the operator all the information needed in order to set the machine adequately for the grinding process. The centerless grinder ordered by Ilmec is conceived to become more and more automated (as concerns the packaging as well as the automatic identification of the product). Even if the cast iron base has increased in its dimensions, the machine can be easily accessed by the operator for the controls and the cleaning operations. In this way the perfect synergy between machine and operator is reached and this reduces also maintenance and processing change times.

MONZA 620: FEATURES

Heavy duty one piece cast iron base is much different compared to the previous versions of centerless grinders. The dimensions and the width of the veining are higher, features that brings few benefits : steadiness and vibrations absorption thanks to the higher weight of the base descripted above; Protection Guards compliant with UE standards, which raise the safety standards, keeping easy access for the operator during machine set up and cleaning. The slides new motion system can move close to the grinding wheel, keeping the support from the guides even with small diameters and even when the grinding wheel is completely worn out. "at the same time- Pessina explains- the wheel dressing process, on both conventional and numeric control machines, is managed by an electrical axis, which avoids problems related to oleo dynamic that the hydraulic axes had. This way it is possible to low the dressing process speed in order to create the perfect grip on the wheel."

Line 20 grinders are equipped with advanced software that compensate the operator analysis and reaction capacity and are really easy to manage. They can be implemented with CAD/CAM versions to create wheels different profiles. The standard grinding wheel has variable speed: according to the quantity that needs to be processed the operator defines the speed, and gradually regulate the speed to the total consumption of the wheel. If requested the constant speed can be set: the operator set the required speed at the start and after the CNC will grant spindle rotating speed increase as the wheel wears out.

Ilmec in brief

ILMEC
meccanica di precisione

15 resources in the company. 20 automatic multi-spindle lathes, 16 transfer lathes, 3 fixed head lathes, 2 transfer machines. 2 furnaces for heat treatment, 8 centerless grinders: 6 Monza 500/510, 1 Monza 300 equipped for the through feed grinding, 1 Monza 620/350 CNC2. 1 rolling machine, 2 vibratory finishing machines and a tumbler.

ILMEC AND MONZESI: WHAT DOES THE FUTURE LOOK LIKE?

Cardinali evaluates positively the relationship with Monzesi, also with a view of mutual cooperation aimed at an always better knowledge of the grinding machines Monzesi. "Monza 620 is still waiting to be discovered - says Ilmec's owner - we are going to create a partnership with Monzesi in order to understand together our needs and to find out the best way to optimize the production cycle in full compliance with the client's needs." "The best way of doing research and development is obtained thanks to the continuous exchange of opinions and feedbacks with the clients - underlined Pessina – we take advice from our clients, in this case from Ilmec with whom we optimize the machinery operations. In Italy Ilmec has become the leading manufacturer of through feed shafts and always more businesses prefer to rely on Ilmec, rather than searching for other manufacturers abroad.

Cardinali reveals that "Within this summer we will evaluate, together with Pessina, the opportunity to buy a second grinding machine Monza 620 and this is due to the fact that the already purchased model is meeting the initial expectations and I would like to achieve the same result with a second machine as concerns another production line."