

Quality and experience

at the service of customers



MACHINES

Professionalism and experience, high quality materials, innovative solutions, accurate execution, timely deliveries and, above all, great passion allowed OFBM MOULDS to operate in the global market. For deep drilling operations the company relies on the solutions from Italian manufacturer I.M.S.A.

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Minutes
READING
TIME

A company that loves challenges. This is immediately apparent when visiting **OFBM MOULDS** in Cologne, in the province of Brescia, Italy. A company with a strong passion for the world of moulding that over the course of its years in business became a point of reference both in Italy and abroad thanks to continuous investment in new generation machines and systems, as well as in highly specialised personnel. Founded in 1985 by three partners, later joined by a fourth one, the company is currently run by two families: Begni and Olmi.

OFBM MOULDS specialises in the design, construction, testing and supply of medium and large highly complex moulds for injection moulding of thermoplastic materials and compression moulding of thermoplastic and thermosetting materials. The company also creates moulds for the die casting of composite parts (SMC-BMC-GMT) and carbon fibre. To complete the service offered to customers, OFBM MOULDS also manufactures cooling templates, deburring templates and manual or automatic drilling and punching jigs. An important step for the company occurred in the mid-1990s, when Management decided to diversify the company's activities, building not only injection moulds but also compression moulds. "This choice allowed us to grow steadily, giving us the opportunity to invest in new technologies and personnel," says Giovanni Begni, founding partner of the company.

In 1996 it was the first company in Lombardy to purchase a high-speed machining centre. "We were pioneers in this respect; at the time, the tooling on the market was not yet capable of working with feeds of 20,000 mm/min. That's why we used around eighty inserts every day to complete our machining operations," says Giovanni Begni.

Since then investment has never stopped. In 2017, the company invested heavily in the new assembly department that now can handle moulds of up to 50 tonnes. "We currently have an operational area of 4,500 square metres and approximately forty employees," says Giovanni Begni.

OFBM MOULDS operates in a variety of sectors, including automotive, trucks, energy, agricultural machinery, garden furniture, technical and sanitary items. The company's turnover is split 70% to the



Mould made by OFBM MOULDS



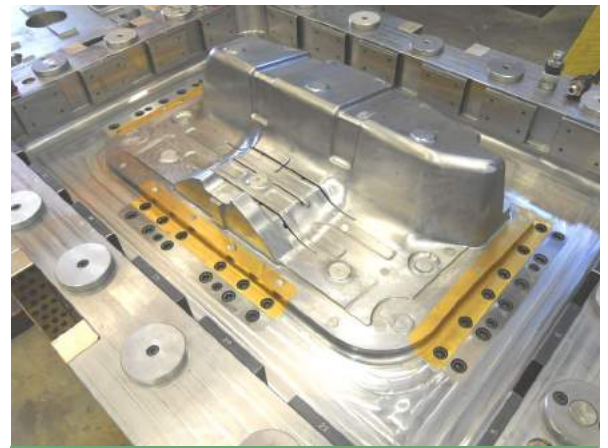
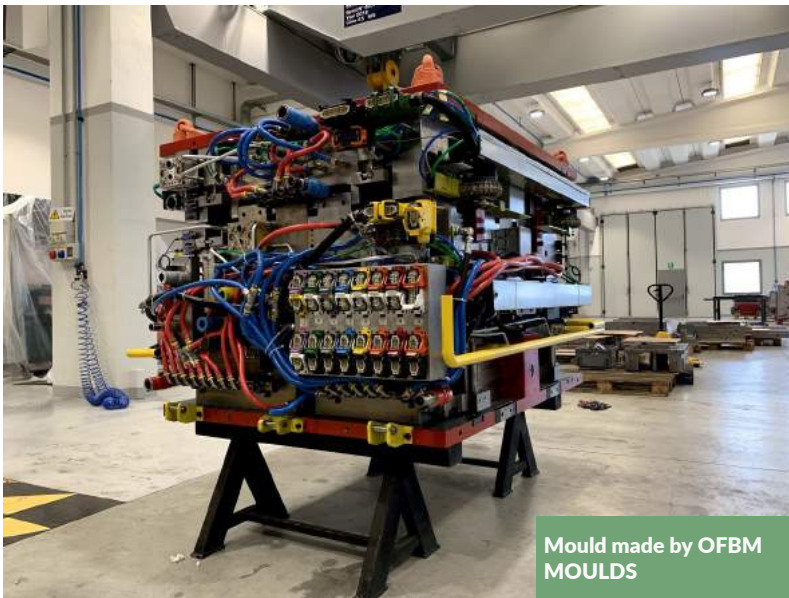
The tool room is equipped with I.M.S.A.'s MF 1450BB deep hole drilling machine

foreign market and the remaining 30% to the domestic market.

Obsessive attention to detail

OFBM MOULDS can offer its customers a complete service, from product engineering to mould testing.

"The full integration between designers and engineers provides the customer with ensured continuity and the reliability of optimal development of the manufacturing equipment," says Giovanni Begni. "In this phase, the shapes and the technical characteristics of the item are defined on the basis of experience in the field of thermoplastic or thermosetting resins. Which materials to use and which technologies to apply are just some of the



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Mould mounted on the MF 1450BB drilling machine

aspects that our technicians assess.”
 “We developed a carbon dispenser for a major manufacturer of diving equipment. Until then, it had been manufactured in metal, with the problem that condensation would occur when underwater,” says Alberto Begni, Giovanni's son and OFBM's Chief Operation Officer. “We managed to find a way of printing this carbon fibre dispenser using SMC technology, thereby reducing thermal conductivity. This product was developed about 10 years ago and is still on the market today.”

A visit to the tooling room immediately shows that modern technology is at the forefront of the Company: 3- and 5-axis high-speed milling units both gantry and moving column, deep hole drilling machines, EDM machines, grinding machines, lathes and solutions capable of machining even large moulds.

Compression mould sampling is carried out at OFBM MOULDS with a 500 t and 1,000 t vertical press with 2,500 x 1,800 mm plates. “Injection and compression moulds with presses of up to 4,000 t clamping force are tested at external moulding plants,” says Giovanni Begni.

OFBM MOULDS is a manufacturing company that pays careful attention to every detail. Having high-performance machines is not sufficient for them. “We want to offer our customers an efficient and



The MF 1450BB drilling machine has been in the tool room since 2017



Press for sample runs



Mould testing

tidy workshop, as well as excellent services. Our company, for example, still retains CAD data of moulds built 20 years ago,” says Giovanni Begni.

Deep drilling and milling combined

In order to better manage the mould production process, OFBM MOULDS is also equipped with a gun drilling machine. “We wanted to invest in this type of machine for years, but for various reasons we had never managed make this wish come true. In 2017, however, the need became so great that we decided to make this investment, purchasing the MF 1450BB Gun Drill from I.M.S.A.,” explains Alberto Begni. “Before purchasing it, we reviewed the various options on the market, but in the end the I.M.S.A. machine had a mix of unique features that others didn't have, such as the dual spindle (drilling and milling), which is essential for carrying out operations around the drilling. Our need, in fact, is to perform deep drilling but also milling operations. Currently, 60% of our work is drilling and the rest milling. Essentially, we take a block of steel, drill all the holes and then work on the mechanical part: flattening, eyebolts, text, etc., in a single placement session. Another important feature that made us

choose the MF 1450BB model is the addition of the table traversing movement (U-axis) to facilitate the handling of the 4 faces; an important advantage when machining both small and large moulds. In the first case, in fact, it is the table centre that approaches the machining centre; in the second case, when the part is so large that it protrudes beyond the geometric limits of the table, it is possible to move the table centre away from the machine, returning the surface of the mould to the best position for the machining unit (whether drilling or milling)”.

Vertical gantry structure

The MF 1450BB deep hole drilling machine provides deep drilling up to 1,450 mm in a single cycle for diameters between 5 and 40 mm; milling operations for setting up and completing holes (boring, rolling, threading, etc.), with a horizontal milling stroke of 1,050 mm obtained by adding the ram stroke (W axis 600 mm) and the milling ram stroke (Z axis 450 mm). The working table (roto-transversing) is made of standardised and ground spheroidal cast iron, dimensions 1,200x1,500 mm, with a U-axis with 500 mm stroke, and ensures a maximum rotating capacity of the workpieces with a maximum weight of 12,000 kg. The deep hole drilling performance of the MF1450BB gun drill remains the key feature for the best return on investment on a



Aerial view of the OFBM MOULDS headquarters in Cologne, in the province of Brescia, Italy

machine of this type, whose mechanics, together with the 8-9 axes available, offer significant technical specifications, thanks also to a spindle with 11 kW power at 4,200 rpm. Starting from the special and exclusive “gantry” structure of the column, meaning supported both at the bottom and at the top and made of standardised electro-welded steelwork, which provides 16 times more rigidity than the traditional configuration (column guided and supported only at the bottom), ensuring process reliability and processing speed.

In addition to ensuring high productivity in deep hole drilling processes, the MF1450BB has been specially designed to offer high performance in milling, in order to meet all preliminary and completion machining of deep holes on an independent axis. In this regard, the milling module is equipped with an ISO 50 head with 29 kW power and 6,000 rpm, for a maximum torque of 200 Nm. An automatic tool room has been chosen to supply this machining stage. Depending on individual requirements, it can be sized for 20, 40, 60 or 150 positions (maximum permissible tool length up to 350 mm, with a diameter of up to 100 mm and a maximum weight of 25 kg per tool), ensuring the greatest possible flexibility.

The MF 1450BB is equipped with a Heidenhain TNC 640 numerical control system with specific functions and machining cycles for deep hole drilling and coordinate adjustment for sloped holes. I.M.S.A., in fact, together with Heidenhain technicians, designed specific cycles for its machines, with the specific aim of providing targeted processes while managing the PLC parameters in a traditional way. In other words, a “customer care” cycle usable as a standard cycle.

Efficient after-sales service

When choosing a tooling machine quality is only one of the aspects that a company usually takes in consideration. Giovanni Begni ends by saying: “Nowadays, after-sales service is crucial. In this sense, the quality that I.M.S.A. provides for its machines is transferred over to its services. Their technicians have always been knowledgeable and ready to solve our problems even beyond business hours.”

