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Opening photo: The core business of Saverl, a company based in Almenno San Bartolomeo (BG) and established in 1954, is the powder coating of components for various industrial sectors, including automotive.



FOCUS ON TECHNOLOGY

Saverl: The Innovation-Oriented, Pioneering Company in the Italian Powder Coating Sector

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The development of markets and the emergence of new demands call for innovation. However, innovation does not stop with individual technologies or successes and, very often, it does not only involve an individual party. Indeed, it is the

result of a synergy of choices, strategies, and collaborations, which guarantee the continuation of the innovative process and the advent of ever more numerous expressions of human ingenuity. The coating sector is no exception. Saverl,

a company based in Almenno San Bartolomeo (BG, Italy) and established in 1954, has adopted precisely this philosophy, thus becoming one the first companies in Italy to perform powder coating operations. Founded by Abele

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Figures 1 and 2: Saveral in its early years and today.

Preda as a galvanic processing firm, Saveral devoted itself to liquid coating in 1960 and then abandoned it in 1970 with the installation of one of the first powder coating plants. The company now covers a 10.000 m² area, it has about forty employees, and it has several high-profile customers in the automotive, mechanical carpentry, architecture and furniture and electromechanical/ electric and electronic components industries (Figs. 1 and 2).

The significant growth recorded in these sixty-five years would not have occurred without the orientation to innovation that distinguishes the company and without the collaboration of technological partners able to share this approach, as CEO Luigi Preda explains (Fig. 3): "Saveral has always been an innovative firm: we were among the first to introduce powder coating in Italy. However, in order to be innovative and continue to meet our customers' needs, we need equally innovative partners to support us in the development and implementation phases." One of these partners is M.I. Due (Triuggio, MB, Italy), specialising in the design and construction of industrial surface treatment plants, which installed Saveral's four coating plants.

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A system for every need

Powder coating has been the core business of Saveral for over forty years. In 2014, the company began a modernisation process to achieve maximum quality, flexibility and production efficiency. "Half of Saveral's production is intended for the automotive market, for which we paint different components such as, for example, brake callipers and pads, wheels, engines for motorcycles,

cylinders, and levers for motorcycle brakes (ref. Opening photo). The other half consists of carpentry components for different uses, such as parts for horizontal packaging machines, for pellet stoves, and for high-end furnishings for hotels and cruise ships. The dimensions and material of the workpieces are also varied. Therefore, over the years, it has become increasingly important to equip ourselves with pre-treatment and coating lines that guarantee greater production flexibility," explains plant manager Vincenzo Montesanti. "That is why we turned to M.I. Due, which took care of the design and installation of all the coating plants now present in our factory."

Saveral has four off-line pre-treatment plants:

- a fluotitanation system with a nanotechnology process;
- a phospho-chromating system;
- a phospho-degreasing system;
- a degassing system.

There are four coating lines:

- a industry 4.0 oriented line dedicated to brake pads, equipped with a continuous flow belt linked to the powder application, curing, and cooling stations;
- a line for coating parts with a maximum size of H 1800 x W 4000 x D 1000 mm, featuring a Wagner quick colour change booth with reciprocators and two manual stations (Figs. 4 and 5). The colour change operation takes place in about 7 minutes

in a fully automatic manner, through the new SuperCenter EVO powder management centre (Fig. 6); it allows the setting of over fifty painting programs and it is equipped with an UltraSieve 200-micron sieve.

The booth is equipped with an automatic fire detection system and it is industry 4.0-oriented;

- a line for coating parts with a maximum size of H 1000 x W 1000 x D 700 mm, equipped with a booth for manual application and reciprocators. The booth is equipped with an automatic fire detection system;
- a line for painting large-sized parts up to a maximum of H 2500 x W 6000 x D 2000 mm, installed at the end of 2018 and equipped with an in-line pre-treatment station and a manual coating booth. The booth is equipped with an automatic fire detection system.

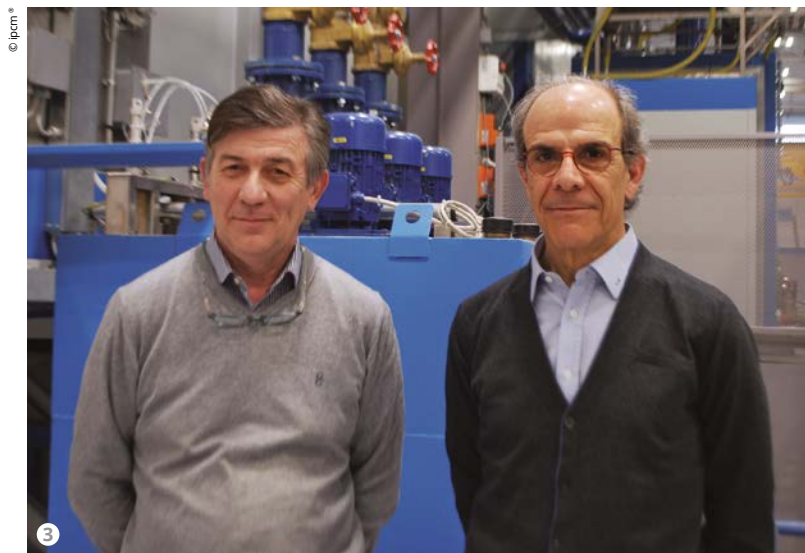


Figure 3: From left to right, Saveral CEO Luigi Preda and plant manager Vincenzo Montesanti.

“Saveral has always been an innovative firm: it was among the first to introduce powder coating in Italy. However, in order to be innovative and continue to meet the customers’ needs, it needs equally innovative partners to support it in the development and implementation phases. One of these partners is M.I. Due (Triuggio, MB, Italy), specialising in the design and construction of industrial surface treatment plants, which installed Saveral’s four coating plants.”

The project of the new line for large-sized workpieces

The plant that can handle parts up to 6000 mm in length was the last one to be installed at the premises of Saveral. M.I. Due designed it according to the Industry 4.0 principles. “The decision to equip ourselves with this system stemmed from the will to meet the requirements of a particular group of customers needing to coat larger workpieces,” says Montesanti.

“This line is able to handle large-sized parts, but we can actually use it also to coat smaller components. This gives us extreme production flexibility (Fig. 8).”

The line also performs a three-stage in-line pre-treatment including a phospho-degreasing operation followed by two rinses with osmotic water (Fig. 9).

The process continues as follows: oven drying, masking,



Figures 4 and 5: The line for coating parts with a maximum size of H 1800 x W 4000 x D 1000 mm, featuring a Wagner quick colour change booth.



Figure 6: The Wagner SuperCenter EVO powder management centre.

coating in a manual application booth with a floor suction system and two mobile platforms (Fig. 10), and curing (Fig. 11).

"This coating line has enabled us to meet new market needs without sacrificing production efficiency and sustainability, another very important factor for Saveral," states Luigi Preda. "The choice to integrate the pre-treatment into the line has allowed us to reduce our production and lead times by enabling us to paint different-sized parts with a continuous flow." "The system was designed for greater energy efficiency. The centralised diathermic oil boiler reduces heat loss and optimises

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Figure 7:
The last system
installed by
M.I. Due.

“This coating line has enabled Saveral to meet new market needs without sacrificing production efficiency and sustainability, another very important factor for the company. The choice to integrate the pre-treatment into the line has allowed it to reduce the production and lead times by enabling it to paint different-sized parts with a continuous flow.”

fuel consumption while improving the temperature control of the drying and curing ovens,” says Vincenzo Montesanti. “The application booth is also equipped with an extraction unit for overspray recovery, which has allowed us to reduce the consumption and disposal of powder, with a benefit also in terms of environment. Finally, we installed an osmosis system for water recirculation in the pre-treatment tanks and a waste water treatment plant.”

Close cooperation with suppliers

“Saveral never stops: in 2014, we started a modernisation project to guarantee greater quality and production efficiency to our customers and a healthier and



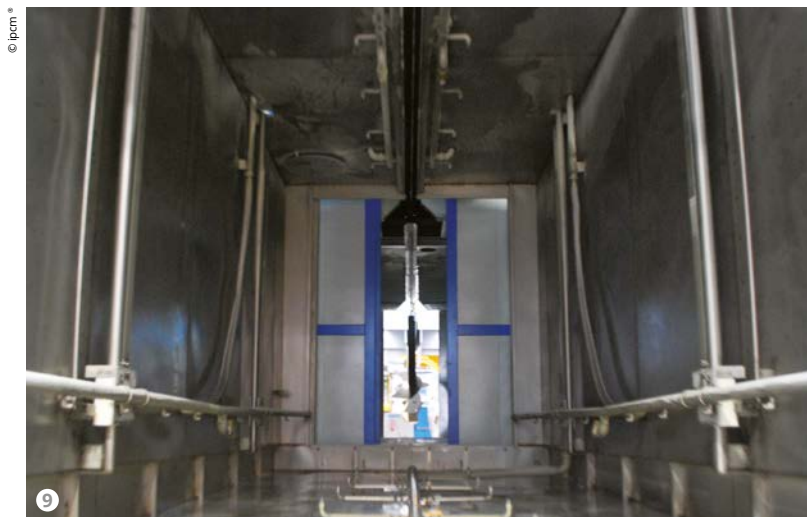
more comfortable working environment to our employees,” says Luigi Preda. “We are constantly looking for innovative solutions and products. Therefore, it is important to surround ourselves with partners and suppliers who can keep up with us with customised and equally innovative solutions.”

“Our collaboration with M.I. Due has allowed us to implement our projects and confirm our reputation as a company offering flexible productions with low lead times. Especially thanks to our last plant, we have expanded our business by making Saveral even more

Figure 8: The line is able to handle workpieces with maximum dimensions of H 2500 x W 6000 x D 2000 mm.

“Over the years, it has become increasingly important to equip Saveral with pre-treatment and coating lines that guarantee greater quality and production flexibility. That is why it turned to M.I. Due, which took care of the design and installation of all the coating plants now present in our factory. Saveral has three off-line pre-treatment plants and four coating lines.”

Figure 9:
The inside of the
pre-treatment
tunnel.



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Figure 10:
The coating booth.

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Figure 11: The entry of the curing oven.

“The collaboration with M.I. Due has allowed Saveral to implement its projects and confirm its reputation as a company offering flexible productions with low lead times. Especially thanks to the last plant, it has expanded the business by making the company even more competitive and strengthening its market position.”



Figure 12: Saveral has a department dedicated to additional processes, such as serigraphy.

competitive and strengthening its market position. In the past, we could only treat our parts in our pre-treatment systems and then transfer them to the coating lines. The new plant has reduced production times by around 30%, with a positive impact on production costs,” states Montesanti. “As for the powders applied, it is important for us to guarantee a high quality level to our customers. We use more than 500 powder coating types and we buy about 500 tonnes of powder a year from both Italian and foreign manufacturers, with whom we work closely together to develop unique solutions.”

“Saveral also deals with upstream and downstream processes, from pre-assembly to assembly, serigraphy (Fig. 12), and packaging. That is why quality and control are crucial factors for us,” says Montesanti.

“We are already ISO 9001-2015 certified. Starting from April 2018 is in place the “Administrative Responsibility of Companies” certification conforming the Italian Legislative Decree no. 231/2001. Soon we will also obtain the ISO 14001 and ISO 18001 certifications.”

“Although the new plant has only been in operation for a few months, we have already been approached by several new customers. Having highly efficient coating lines and being even more flexible in terms of production has enabled us to grow a lot and continue to be known as a company that produces quality work,” states Montesanti. ○