



Fertile climate for automation

In recent years Berco, the world's No. 1 manufacturer of tracked undercarriages for earth-moving machinery, has recorded an upswing in production from 80,000 to 200,000 product tons. A factor in this growth has been the gradual automation of the manufacturing process brought about by the introduction of ABB robots.

> Berco S.p.A. headquartered in Copparo, in Italy's municipality of Ferrara, began in 1920 as an expansion of the Bertoni & Cotti machine shop, and it has grown decade by decade to become the top manufacturer of tracked undercarriages in the world. In recent years, through gradual automation, the company's production has increased from 80,000 to 200,000 product tons. A critical element in this automation has been ABB's robots, which are deployed in a handling capacity at the company's Copparo plant, and for welding and hot-forming work in the group's other two factories in Italy.

Berco's production can be broken into two major constituents: undercarriages, which make up the group's core business, representing 97 percent of sales, and machine tools. The common denominator shared by the two areas is technological expertise. The company's "homemade" mindset has always caused it to stand out, explains Marco Balducci, who is in charge of automatic machinery installation and maintenance for Berco. "Since the 1920s, Berco has manufactured each component in-house, either by choice or because of the demands dictated by its geographical location, which is

remote from large industrial centers. In recent times, the company's pride and joy has been the engineering group Berco, which is capable of independently developing the most sophisticated solutions to satisfy any customer's requirements. Thus, all phases of the manufacturing process are developed at the Copparo site, from project design to taking delivery of the raw material, including hot-forming of items to be assembled through machining, heat treatment and painting, varnishing and packing. Only in recent years has the term 'outsourcing' entered the company's vocabulary." Still, Berco makes 90 percent of the products it sells worldwide in-house.

In Italy, however, manufacturing companies offering Berco's range are now unique. "We are going against the general market trend, both because we choose still to manufacture everything in-house and because of our numbers: 200,000 product [metric] tons completed in 2004 and 3,010 employees," says Rodolfo De Carolis, business development manager at Berco. Apart from Copparo, the group employs the services of two other companies in Italy.

Berco has three branches outside Italy – Berco America in the United States, Berco Sul in Brazil and Berco Germany – and distributors worldwide.

Berco has always worked to improve performance and delivery of its solutions, plowing back profits to promote growth, research and product innovation. In the early 1990s, the company decided to automate certain processes by introducing ABB robots. “The first ABB robots were installed at Copparo between 1992 and 1993, with the aim of boosting production volumes and enhancing the quality,” Balducci explains. “The robots have been used to manage operations that used to be handled manually.

“Using robots called for special analysis,” he continues, “because it involved, on the one hand, designing the electrical interface with the interconnected machines to enable it exchange information to allow the two machines to work in tandem and, on the other hand, ensuring the safety of the operators employed on the robotized cells.”

During the study phase, Berco relied on the support of ABB’s technicians, who helped train Copparo employees with respect to automation and robotics. “We enjoyed the continuous backup and support of abb until 1997, after which a working party was formed at Berco to install and program robotized islands and deal with safety aspects of the cells,” says Balducci. “Although we work as a self-contained unit in this respect, we still take advantage of ABB’s consultancy for technologically more advanced projects, as in the case of the robotized lines installed at the Castelfranco plant, where we are engaged in welding. Finally, in association with ABB, we have a preventive and corrective maintenance contract to take prompt action in the

>FACTS

The benefits of automation at Berco:

- New technical skills and enhancement of operators’ level of preparation.
- Improved process quality in terms of productivity, costs and safety.
- More accurate computation of production timing and manufacturing rates.



ABB anthropomorphic robots have been deployed to handle operations at Berco’s Copparo plant.

event of a malfunction and to ensure maximum continuity of robot operations.”

From 1994 to 2004 some 100 ABB robots were installed at Berco’s three Italian factories, thus making the company ABB’s main customer among those classified as robot end users. Balducci explains: “First, it should be made clear that a robot is no substitute for a person. Its introduction has resulted in operators acquiring new technical skills and enhancing their own level of preparation. Second, there are advantages in terms of quality, process, productivity, costs and safety, the latter being a consideration of special importance, given the weight and dimensions of the items being moved around. Third, the rise in productivity has made it possible to better study the machine cycle, with more accurate computation of production timing and manufacturing rates.” For ABB, too, collaborating with a customer of Berco’s caliber has had positive spin-offs. Besides the financial return from supplying a significant number of robots, ABB’s relationship with Berco adds to the value of ABB Process Solutions & Services’ capacity to develop ad hoc application technologies. ☉

All phases of the manufacturing process, design and raw material logistics take place at its Copparo plant.

>FACTS

No. 1 in the world

Founded more than 80 years ago in Italy as a small, specialized company servicing agricultural tractors, Berco has gradually grown to become a leading manufacturer worldwide in the field of production of tracked vehicle components, equipment for overhauling the undercarriages of earth-moving machinery and manufacture of machine tools for the reconditioning of internal combustion engines.

The experience it has gained over decades of activity, its constant search for new technological solutions and the high quality of its products are the company’s key attributes.

Berco is now the largest company in its sector worldwide, with the biggest combined forging capacity. It is part of the Thyssen Krupp Group and parent company to Berco of America and Krupp Berco Deutschland.

