

Traceability 4.0 through streamlined package labelling with cobots

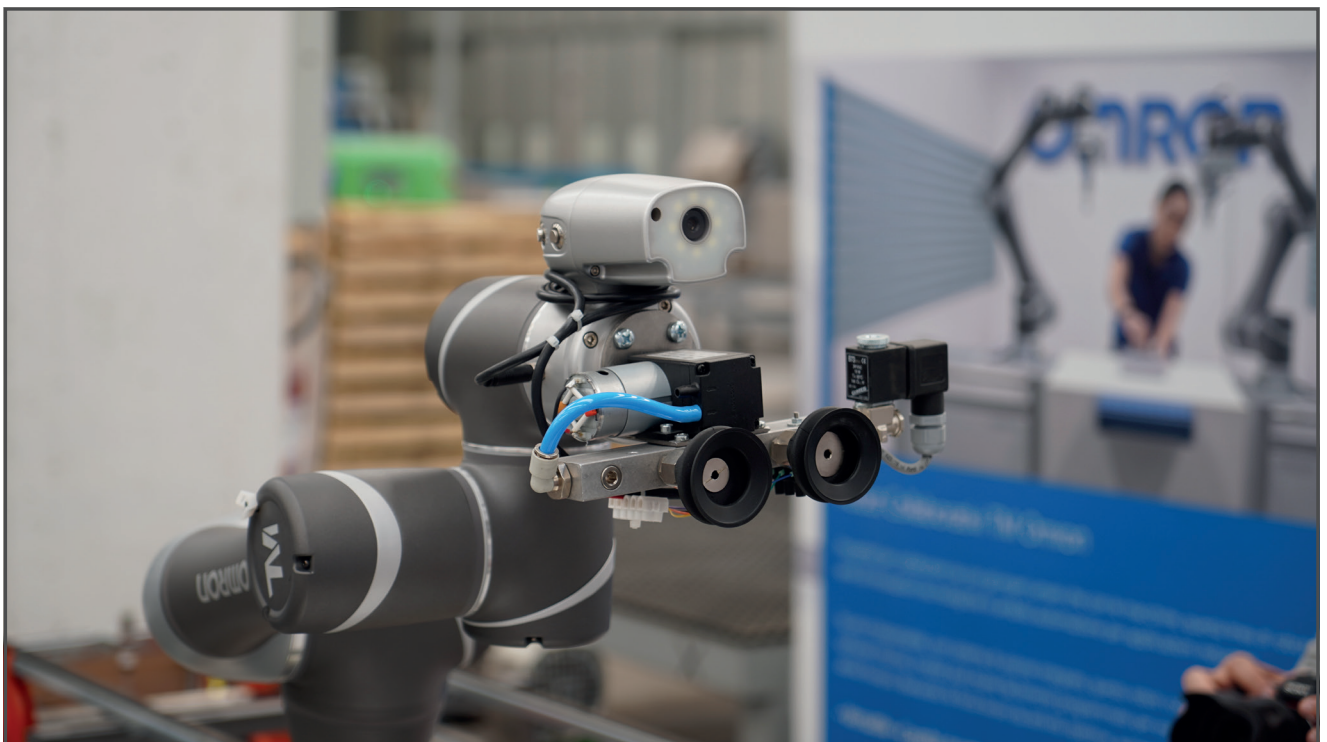
Collaborative robot carries out intelligent labelling on different product formats - reducing downtime due to format changes by up to 70% - in a solution developed by Bluengineering for Gruppo Romani in Italy.

The accurate labelling of packages from a production line can be a complex and labour-intensive. This is particularly true if the packages include breakable materials. Labelling is a process that lends itself to automation – in particular, through the use of collaborative robots (cobots) that can work alongside people. One organisation that has developed a solution for this process with a cobot is Bluengineering, part of Gruppo Romani SpA in Italy.

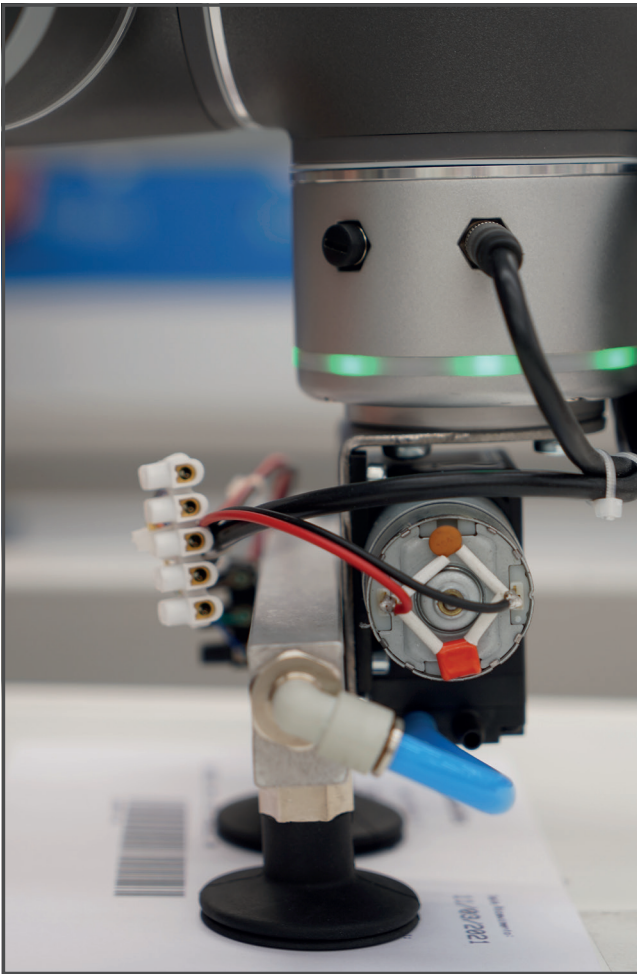
The search for a solution

Bluengineering specialises in process control in the ceramic industry. To automate the labelling process of the packages at Gruppo Romani, they opted for the OMRON TM5 cobot, which is versatile and adaptable and includes an integrated vision system.

The company needed to be able to apply labels on one of the four sides of outgoing packages, and to manage format changes quickly, without the need for any complex tooling operations. The OMRON cobot was ideal, as it has a reach of 700 mm and can be taught how to handle packages of different sizes and shapes in just a few minutes.



The cobot has provided a more continuous and more efficient solution for labelling operations.



The integrated vision system enables it to read the barcodes; to control the correct positioning of the package, and to track and verify the packages.



The collaborative robots (cobots) can work safely alongside people.

The operator can manually define the cobot's gripping, movement and deposit points.

The cobot carries out most of the repetitive operations involved in labelling, leaving workers free to focus on activities that provide greater added value. The collaborative nature of the machine means that the cobot can work safely in the presence of factory employees. This is possible thanks to its integrated monitoring features, which dynamically constrain the force and pressure exerted within the vicinity of the operator. The cobot can be programmed to stop or to evaluate all possible interactions that might limit its actions. This ensures that any accidental contact with people won't endanger them at all.

Quick and versatile labelling

The OMRON cobot's integrated vision system enables it to read the bar codes or QR codes on a label; to control the correct positioning of the package, and to track and verify the packages. All of the data is sent to and managed centrally by an OMRON NX102 programmable logic controller (PLC), which is connected to the manufacturing execution system (MES). This provides integrated supervision of the entire production cycle in real time. From the terminal, the operator can see the status of production; the batches in transit; and the number, speed and method of labels to be printed and applied.

The cobot has provided a more continuous and more efficient solution for labelling operations. In particular, it provides a very quick and versatile method of dealing with different product formats. And this leads to other tangible benefits: cobots can reduce any downtime due to format changes by up to 70% compared with a traditional mechanical axis system. This is all achieved whilst maintaining an emphasis on the maximum safety of nearby personnel.



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About Bluengineering srl

Bluengineering srl is an engineering company operating in process control in various production sectors - ceramic, packaging, food, chemical and mechanical - with particular attention to automation dedicated to the production of porcelain stoneware ceramic tiles. The company is strongly oriented towards technological innovation, and strives for the continuous improvement of production processes, using the most modern equipment available on the world market. Bluengineering also stands out for its fast, efficient and precise after-sales service. Among the most important activities developed by Bluengineering Tecnologie are: the upgrade and regeneration of obsolete automatic systems programming of PLCs and industrial PCs; electrical systems for industrial automation; electrical panels for industrial automation and process control; dry colouring of atomised products; systems for colouring the slips; and weighing belts for atomised powders, granulated products and raw materials. www.blueng.com

About Gruppo Romani S.p.A. Industrie Ceramiche

Gruppo Romani, founded in 1968, is an expression of the authentic 'Made in Italy' entrepreneurship. Born out of passion, competence and technological research, today it is recognised and appreciated all over the world for the unique style of its ceramic solutions and its complete dedication to product quality with a view to continuous evolution. Gruppo Romani, through its Serenissima, CIR Ceramiche, Cercom and Cerasarda brands, tells an industrial story with a high craftsmanship value, integrated with ongoing technical and production innovation. The ability to interpret and anticipate the aesthetic trends of the market, supported by cutting-edge plant design, is the basis of the group's offerings. The quality of the product and services, customer satisfaction, respect for the environment and the territory are mandatory commitments for Gruppo Romani. They are fundamental cornerstones of the business philosophy supported by the Romani family and are pursued daily by every single component of the company. www.grupporomanispa.com

About OMRON Corporation

OMRON Corporation is a global leader in the field of automation based on its core technology of 'Sensing & Control + Think'. OMRON's business fields cover a broad spectrum, ranging from industrial automation and electronic components to automotive electronic components, social infrastructure systems, healthcare, and environmental solutions. Established in 1933, OMRON has over 30,000 employees worldwide, working to provide products and services in 120 countries and regions. In the field of industrial automation, OMRON supports manufacturing innovation by providing advanced automation technologies and products, as well as through extensive customer support, in order to help create a better society. For more information, visit OMRON's website at: industrial.omron.eu