



# Cheers! Quality beers and automation

Comac, a company specialized in the manufacturing of plants for the beverage sector, has developed an automatic machine for beer bottling. The company Bonesi Pneumatik has manufactured the pneumatic actuator for the lifting of glass bottles.

SILVIA CIMINI

The history of Comac, a leading Company in automated systems for bottling and kegging plants, began in Bergamo in 1990. Since then, year after year, one project after another, Comac has been able to establish itself in the international market of beverages,

installing its equipment at production sites that for quality and dimensions are recognized as international ones. Over the years, the company has focused on the beer sector, from the product preparation phase to its packaging. In the year 2000, the Research and

Development department was created and it immediately paid off by producing new machines and parts thereof, including a new electronic filling valve for the bottling section and new washing and filling heads for the kegging one.

The results obtained boosted research to technologically improve the product and in 2005 Comac started manufacturing high-speed kegging plants with a production capacity higher than 1,000 kegs/hour for the 50-litre kegs.

## Big plants and craftsmanship.

From that moment, Comac has started playing a fundamental role in the kegging field. Its brand has become known on the international market and its name is linked to the most important producers such as Heineken, AB-InBev, CocaCola, Carlsberg, SABMiller and many others.

“Technological innovation is at the basis of Comac philosophy” says Andrea Gambirasio, head of R&D department. “The technical team has been developing for years qualitative and competitive projects that have been successful both on the kegging and the bottling sector”.



Andrea Gambirasio, responsible for the department bottling R&D at Comac.

Innovation is also due to advanced IT tools and to a search of new materials with increasingly higher performance that have earned Comac the acclaim of the biggest international groups in the beverage sector. Automatic and semi-automatic plants for beverage processing and packaging in glass bottles, cans or kegs of any size are manufactured according to the customer's technical specifications, choosing among the most suitable solutions available in the wide range of machines that Comac manufactures.

Comac pays nonetheless a special attention to microbreweries and craft breweries, a sector where it gained a good knowledge over recent years due to the installation of machines and small plants in many states of North America.

These systems are designed to offer small-sized brewing companies the opportunity to produce their product with the same quality level than big companies.

This market is currently growing worldwide and Comac has specifically engineered a project for microbreweries, which is followed by an experienced, young and dynamic team capable to offer master brewers and quality beer lovers specific advice, tailored to the customer's needs.

The complete and performing monoblock machines for beer bottles are the best solution for rinsing, filling and crowning operations in microbreweries.

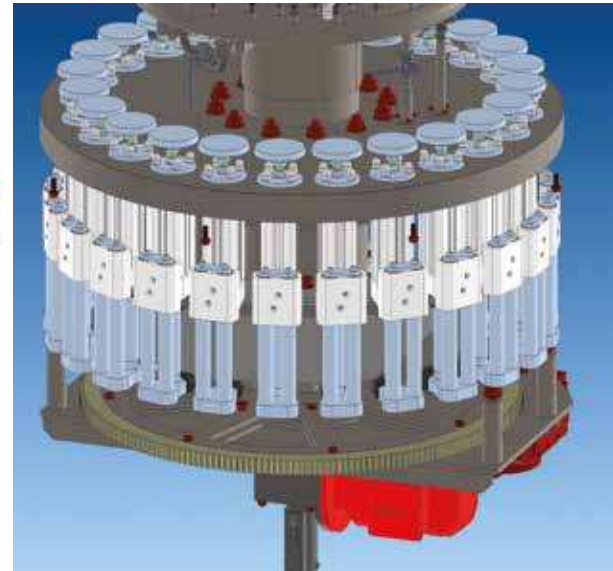


Special pneumatic actuator of Bonesi Pneumatik.

## Product and process innovation.

One of the main challenges in the development of these entry-level products - which are relatively affordable - has been preserving the technical features of industrial machines that have a high hourly output. “Among the other issues faced by our R&D department, the handling of the bottle on the filler has been particularly difficult, when it came to coupling it with the filling valve” says Andrea Gambirasio. On big machines, such handling is performed by the use of special pneumatic cylinders that allow to pneumatically lift the bottle, and to mechanically reposition it on its

# PNEUMATICS



Monoblock filling machine and rendering of the filling carousel.

lowest position. These cylinders cannot be used on the new range of machines dedicated to microbreweries. In order to find an equally efficient and reliable solution, Comac partnered with Bonesi Pneumatik, a company specialized in the manufacture of standard pneumatic components for special applications. Together with Bonesi, Comac technical department has developed a compact special actuator that allows to handle bottles, based on the same procedure implemented on the big industrial monoblocks. The development of this project has been sped and maximized due to the direct interfacing of designers and the CAD 3D Solid edge and Siemens PLM engineering systems used by Bonesi Pneumatik. Following the completion of numerous reliability and life-time tests, Bonesi Pneumatik actuators have been validated and have been adopted as the standard solution Comac applies on its new range of fillers. The new special mechanical cylinder defined as "pneumatic actuator for lifting of bottles", supplied and tested by Bonesi Pneumatik, has been developed together with the technical coordination of Mr. Fabrizio Ghirardi,

area sales manager of the company and who liaised Bonesi with Comac's technical team, granting an effective monitoring of the project development.

## Actuator for automation.

This actuator equipped with a 50-mm diameter pneumatic piston and a 150-mm limit switch has many noteworthy features: heads and cylinder are manufactured in anodized aluminum, while the lower plate connecting the cylinder shaft with the two anti-twist bars is in AISI304 stainless steel.

This plate is particularly important because it integrates the pin with the technopolymer wheel responsible for the actuation, by a mechanical cam, of fast descent of the bottle, after the filling phase.

Due to reduced assembling dimensions and the high stress of the cam mechanical movement, it has been necessary to insert two 30-mm

anti-twist guide bars of chromed and ground AISI304 stainless steel, guided by specifically robust bushings, that have been greased with a high-performing grease. Gaskets used for piston and rings of the rod wiper are made of polyurethane, suitable for usage in food industry and that have a long lifetime even under particularly demanding conditions such as frequent washings in the working area.

The actuator comes supplied with a fastening flange to the worktop and a contact flange for the bottle, both in AISI304 stainless steel.

In short, it can be affirmed that the handling of this project, due to the collaboration with Bonesi Pneumatik, has granted Comac the attention and the effectiveness that only a partnership with a company like Bonesi Pneumatik would guarantee.

*S. Cimini, marketing Comac.*