

CONSISTENT FILLING PERFORMANCE THANKS TO CONTROL TECHNIQUES SERVO DRIVES

The accuracy, repeatability and reliability of a new generation of automatic linear bottling machines from leading Italian filling and closing machine manufacturer CMI, is attributable to the latest generation of servo-drives from Control Techniques.



North Italy-based CMI srl manufactures a range of bottling machines, closing systems and labelling machines designed to meet the specific needs of the detergent/cleaning products, chemical, food and cosmetics industries.

Now, a new range of linear fillers featuring brushless motors controlled by Control Techniques' Digitax ST servo-drives gives significantly improved precision and repeatability combined with flexibility in operation.

The 'Line' automatic linear stainless steel bottling machine features four filling heads for filling bottles and is suitable for edible and detergent liquids. A conveyor belt carries the containers to be filled into a filling area and first station. Driven by a single brushless motor, an assembly with four filling heads is lowered so that the filling nozzles enter the four containers to be filled. A filling chamber is filled with the selected liquid by pressure volumetric control during this phase.

As the filling head assembly is slowly raised, the liquid in the filling chamber is injected through the nozzles into the containers with a space/volume control.

An out-feed conveyor belt then carries the filled containers to the capping area where bottle caps are attached automatically with the help of a brushless torque control system.

Another belt carries the filled, capped containers to the discharge area.

The filling and capping cycling is fully automatic and run by the Digitax ST brushless control system. Control of the

KEY BENEFITS

- SIGNIFICANTLY IMPROVED PRECISION
- INCREASED REPEATABILITY
- FLEXIBILITY IN OPERATION
- SIMPLE CONTROL
- ELIMINATES PLC REQUIREMENT
- EFFICIENT & EFFECTIVE



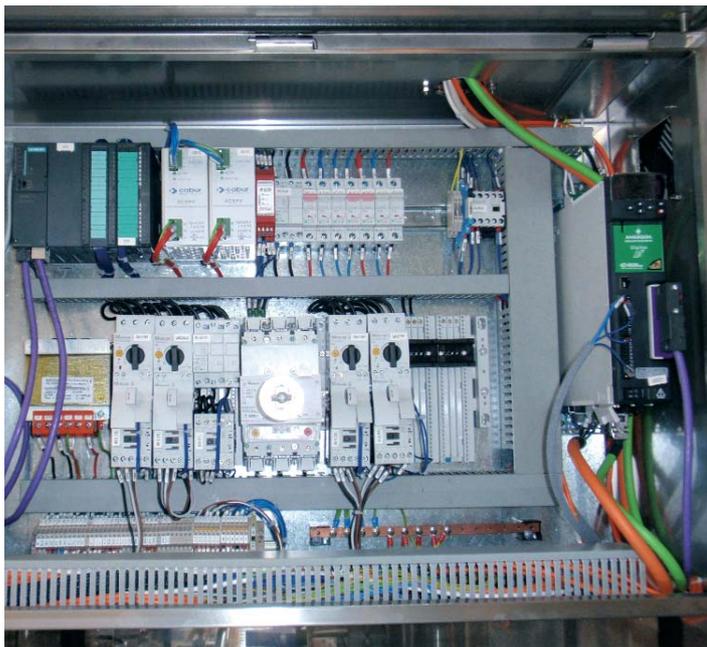
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operation is simple - operators just have to enter a few simple commands into the control panel to set the format of the container to be filled (e.g. 100ml) and the number of containers (e.g. 5000 pieces/hour) - thereafter the machine takes over.

The intelligent SM Application Plus processor, built into the latest generation Control Techniques' DIGITAX ST digital drive, automatically processes data entered and commences the filling cycle with space, volume and torque control without the need, panel space and cost, of an additional PLC controller.

This makes the system extremely reliable, accurate and repeatable over time, thereby guaranteeing a more efficient, effective service and significantly increasing flexibility. The line doesn't even have to be stopped for format changeover (volume changes and product type).

This brushless servo technology has replaced traditional mass or magnetic meters mounted on filling nozzles reducing the overall cost of the system.



Now the accuracy is as good, if not better, and, having removed another layer of equipment, reliability is exceptionally good.

The recently introduced Digitax ST range encompasses four models, each with industry-leading features and extremely compact in size - Base, Indexer, EZ Motion and Digitax ST Plus.

CMI opted for the top of the range Digitax ST Plus that features a full functionality motion controller, optimised for high performance machines requiring synchronised motion. The on-board drive-to-drive networking links multiple axes and enables true distributed control.



Configured using CTSOft, the drive's advanced motion features are configured in a flexible IEC6113-3 software development environment using PLC-open motion function blocks within Control Techniques' SyPT software.

Digitax ST combines reliability, high-performance to increase operating speed, repeatability and accuracy, whilst at the same time reducing panel sizes and costs.

CMI's success in a fast-moving evolving world can be attributed to flexibility, in both design and manufacture, which explains one of the reasons for their choice of easy-to-programme Digitax ST. Their experience in this demanding market has enabled CMI to develop precise solutions to meet customer needs, for the bottle type, the materials used and the characteristics of the processed liquids.

The company makes stainless steel or PVC automatic and semi-automatic bottling machines (rotary pressure and vertical form fill, linear pressure and vertical, linear and rotary with magnetic and mass flowmeter system), linear and rotary labelers, automatic mixing machines, setting machines, palletizers and pallet wrappers.



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