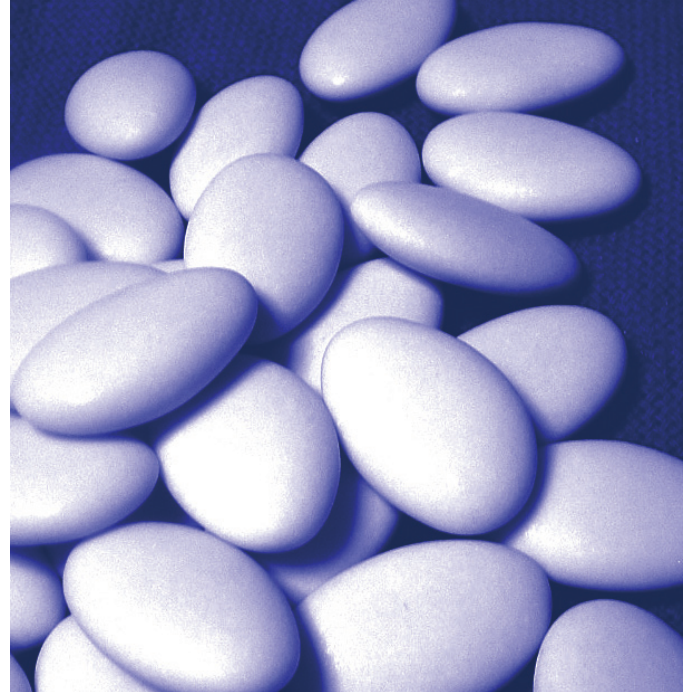


SWEET TASTE OF SERVO SUCCESS IN CONFECTIONERY PACKING

The ability to change the parameters for packing of sweets into boxes has added flexibility and functionality to Italian packaging machines designed for the confectionery industry. This has been achieved thanks to Control Techniques' design team at the Drive Centre in Milan, who have helped IPAC srl to introduce a whole new generation of machines with an ability to incorporate substantial format changes quickly and easily, literally, at the press of a few buttons.

IPAC has manufactured traditional Zambelli type boxing machines, to place packets of all sizes and shapes in multi-layer boxes, for some 30 years. This design of machine uses a sequence of mechanical gears, levers and cams to package round sweet packets into display boxes containing 15, 18, 20 and 40 pieces split into two, three or four layers.

This is a well-tried and tested technique, but one that has limitations, particularly with regard to changing formats as new products and packaging designs are introduced. Changing box formats always proved difficult due to the significant amount of time required to replace major parts (layer building cam, a purpose-designed drive cam to make the layers and a drive cam pushing the flattened boxes into the hopper to be folded) and many adjustments were always needed to perfect the final product.



IPAC talked to Control Techniques Italy to investigate whether it was feasible and cost-effective to overcome this lack of flexibility with the introduction of electrically driven servo-drives and if the speed, repeatability and quality could be maintained by this method.

Working closely with Control Techniques, IPAC redesigned and modified the machine, and the principal gears and parts were replaced with three Control Techniques servo motors

KEY BENEFITS

- FLEXIBILITY & FUNCTIONALITY
- SUBSTANTIAL FORMAT CHANGES INCORPORATED QUICKLY
- STORED PRODUCTION RECIPES
- HIGH LEVEL ACCURACY & REPEATABILITY

controlled by Unidrive SP drives, in servo mode, equipped with SM-Applications programmable plug-in second processor modules.

The three axes are synchronised via Control Techniques unique CTSync network.

The various machine functions are determined by an incremental encoder synchronised with the master absolute encoder and interfaced directly with the PLC, making it possible to set up production recipes incorporating all of the parameters required for format changeovers.

Drives are supplied with specific software developed by Control Techniques to manage electronic cams (which can be configured using parameters assigned by the production recipe/format). The machine movements are as rigid as those of mechanical machines, but with the flexibility that digital technology offers.

Machine functionality is therefore made much more flexible and format changeovers are not only more possible but also



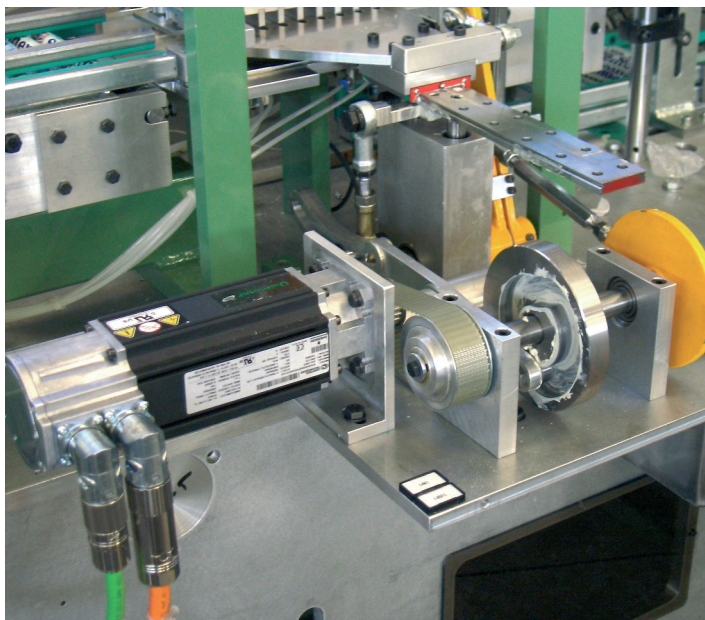
very much quicker. In fact, to make the machine fully operational, only a few mechanical parts need changing and the parameter-based production recipe calls up for the format required - determined by drive movements/speed/accelerations.

The Unidrive SP AC variable speed drive range spans 0.75kW right up to 1.9MW. Unidrive SP is the world's most advanced 'solutions

platform' AC drive, configurable into five operating modes - open and closed loop, vector, servo and regenerating modes - connectivity to most industry standard networks and accepting 14 position feedback protocols.

With a range of plug-in module options, its on-board PLC can be supplemented, as in this case, with programmable modules. The cam program supplied by Control Techniques is just one of a library of programs designed to encompass a wide range of standard industrial automation functions.

IPaC s.r.l. has been producing automatic machinery for the confectionary industry since 1969. Over the years, it has built up a wealth of experience in this field, aiming its expertise in particular at the chocolate and chocolate packaging sector. This is a field that requires a very high degree of specialisation given the fragility of the product. IPaC's experience goes beyond building proprietary machinery, it also possesses in-depth know-how of all machines on the market enabling the company to service, alter and adapt machines to meet customer requirements. The company has recently developed other types of expertise, from the production of automatic feeding lines to the connection of shaping facilities, covering lines and wrapping machines, as well as packaging and wrapping chewing gum and sugared almonds, using its know-how to build its own machines. As an additional service to its customers, IPaC also services, modifies and retrofits machines built by other manufacturers (Italian and international).



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