

Silk-Screen

Since its foundation in 1967, M.O.S.S, an Italian company based in Emilia-Romagna, has been manufacturing and selling silk-screen, offset and hot-stamping machines. These machines are principally used to decorate plastic articles and containers. With their know-how and solid engineering skills, M.O.S.S builds machines for objects of various shapes and sizes, e.g. stiff and flexible tubes, bottles, jars, cups and buckets etc.

Along with their vast array of PC-controlled and high-production standard machines ranging from simple one-color semi-automatic machines to fully automatic 8-color lines, M.O.S.S also offers a first-rate after-sales service, equipment and materials for decoration, as well as the sale and installation of labelling machines on their own production lines.

Steady development

M.O.S.S's business has always been marked by steady technical and commercial development. Today, M.O.S.S employs over 60 people and works together with a network of agents and distributors around the world. It is estimated that 85 percent of production is exported worldwide.

The substantial investment in R&D and the use of new technologies enables M.O.S.S to maintain its position among leading machine manufacturers. Franco Venturi, the Sales Manager, points out, "Our products have developed a reputation for high quality. Every machine is equipped with an electronic engineering controller and design and testing complies with today's high-tech standards."

Assisted by the company's organization, M.O.S.S mass produces machines tailored to match the customers' unique requirements. Their warehouse consists of 35,000 components in addition to their assembly-ready machinery, which makes it easy to carry out the final assembly process and to make deliveries on-time. M.O.S.S's machines are tested on-site and comply with CE regulations.

An important step

Five years ago, M.O.S.S made an important decision to implement a significant new commercial strategy for machine control. "We were served by an outside system integrator company," states Mr. Vannini, M.O.S.S's Purchasing Manager. "They designed our hardware controllers and wrote our software."

"The non-flexible system included a card inserted in the PC which acted as a PLC," states Mr. Guglielmi, an electrical engineer at the company. "And the card was connected to the I/O modules using cables. The I/O modules were inserted inside the control cabinet. The temperature modules, counter, position modules, etc., were also inside the PC."

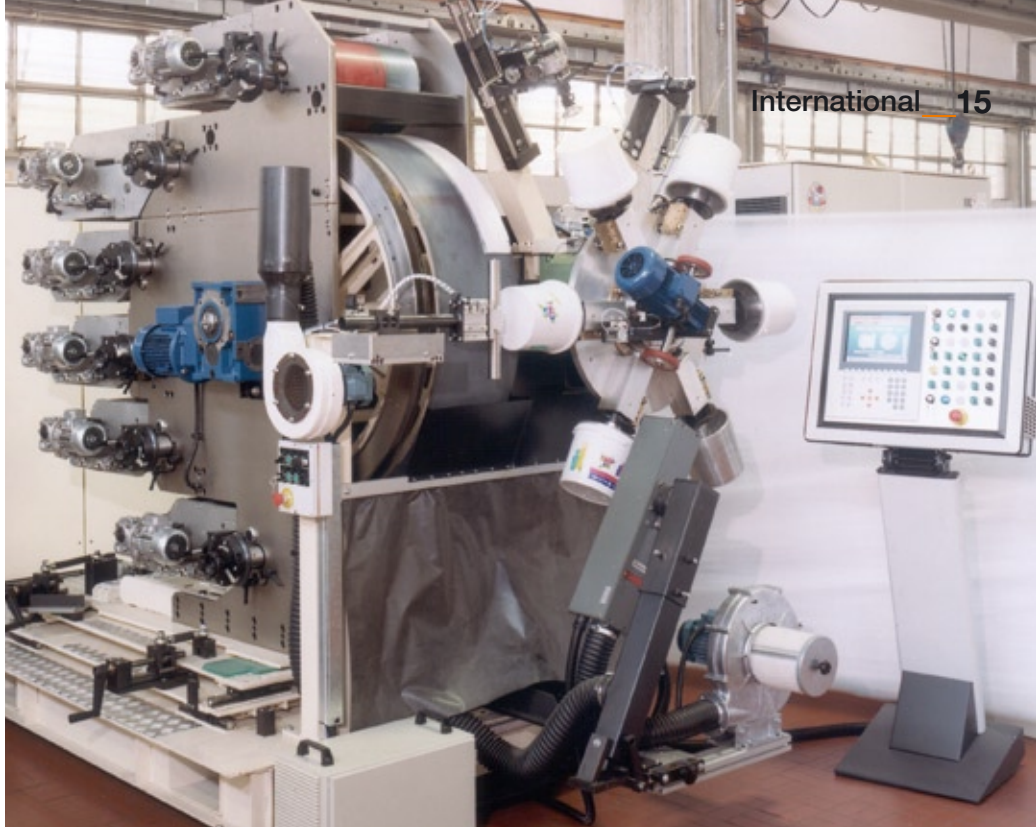
This old rigid solution did not keep business running smoothly. The customers' changes and requests could not be immediately implemented because the controller was provided by the external system integrator.

"The fact that we couldn't fix the controller problems ourselves was another drawback of the old system," says Mr. Guglielmi.

"B&R's flexible solution is constantly improved by customer feedback. As a result, the system is constantly updated and upgraded."

Last but not least, it is important to emphasize controller know-how. Only the system integrator company could re-

M.O.S.S.' offset printer MO 4063 for pail decoration employs a B&R Industrial PC and a B&R 2003 PLC. The decentralized I/Os are connected via fieldbus. A B&R operator panel is used for visualization.



program the old controller. The M.O.S.S engineering department however has mastered B&R controller technology, which can be customized or tailored to customers' needs.

The decision

Mr. Vannini says, "After we decided to changeover from the non-flexible system to the flexible controller, our approach to B&R Automation was an easy step. At that point in time, B&R was the only company able to provide the full package we needed. B&R provides us not only with the control units (the PLC B&R 2003), but also with Provit 5000C industrial PCs, Panelware operator panels, ACOPOS servo drives, and brushless motors ranging from 0.7-1.2-2.5 nm. Furthermore, all components are programmed using a single software tool, Automation Studio™."

M.O.S.S decided to work with a small amount of suppliers for machine parts in order to simplify the process of localizing causes of error and problem areas.

"We chose B&R because they were one of the few companies who could guarantee the quick and flexible assistance we wanted."

"It was also a cost-effective choice," says Mr. Guglielmi. "If we had used B&R PLCs with the other suppliers' brushless motors, then we would have had to purchase the 2005 Series cards." It would have resulted in higher supplying costs

and also created logistical problems. B&R ACOPOS servo drives were not only chosen for their greater convenience but also for their greater performance in comparison to old products. "We were among the first companies to use B&R ACOPOS servo drives and we have reaped the many benefits of B&R's qualified assistance and reliability," continues Mr. Guglielmi.


Vannini emphasizes, "We chose B&R because the company provides not only a higher standard of quality but also more flexibility than the other supplier companies. M.O.S.S needs key suppliers who are both reliable and flexible. B&R has always delivered the technical assistance we have requested. Most of all, they helped us pave a new path. Technical assistance and reliability have played an important role. Today, we recognize the advantages of our choice."

Mr. Vannini concluded, "Moving to new flexible systems maximizes the efficiency and functionality of our warehouse. The obvious advantage is big cost savings."

The machines

On the M.O.S.S production line, the IPC and the TFT display are installed in a console outside the machine itself. The console is connected with the PLC inside the control cabinet using a serial cable. The servo drives, the components for managing the main supply and the control cabinet management itself are grouped in the control cabinet. The machine I/O are decentralized on the machine and connected via the fieldbus. Ac-

cording to the machine sizes, the I/O are arranged in one or more control cabinets and located "at hand".

It is hard to list the main control functions on M.O.S.S's machines because M.O.S.S produces more than one type of machine. The numbers of axes to control can vary. Some machines do not have axes at all even though they are very complex, whereas others have two non-interpolated axes even though they are very simple. "For example, we used brushless motors with control-torque to carry out capping and unloading operations," states Mr. Guglielmi. "As far as sensors are concerned, we employ proximity sensors, photocells and position sensors, which are connected to the central unit via digital I/O. We are now testing the connection of modules for remote I/O and CAN bus." 

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