Manufacturers who want to remain competitive on the global market for printing presses not only need successful machine technology, but also a clear user interface that has been professionally localized for the country of sale. To fulfill this modern-day requirement, one German manufacturer of flexo printing presses with single drive technology is taking advantage of the specialized experience of an external service provider.

When the topic is about flexo printing presses for flexible packaging, linerboard pre-printing and cardboard, and for packaging and paper bag machines, the name Fischer & Krecke is not far behind. The family business established in Bielefeld in 1880 has developed into a global and innovative manufacturer of printing presses for the packaging industry. The technological milestones of the company's history include the introduction of CNC controls and fully programmable cylinder changing systems for flexo printing presses, the construction of the first wide web single-cylinder printing press for UV colors and the
use of servo drive technology in printing and paper bag machines. Together with the other companies of the Fischer group, Fischer & Krecke provides a comprehensive range of well-matched products and services for the planning and implementation of complex projects, from the complete production line through internal logistics systems to turnkey production. An international network of branch offices provides the product-related after sales service that is so crucial for market success.

Fischer & Krecke manufactures bag and linerboard pre-printing presses. The company also specializes in single-cylinder flexo pre-printing machines. The first model is the Flexpress 16S, which is designed for narrow and medium web widths. Meanwhile, this series also contains models for the wide web to the pre-print spectrum (265, 365 and 965). Typical of all Flexpress machines is a large central cylinder, which is equipped with printers for four, six, eight or ten colors. This design enables production rates of up to 600 m/min. Further achievements of the company include a patented technology for fast sleeve-changing and the Flexpress autoclean system for program-controlled inking and cleaning of inking units.

Automation for the world market
An essential feature and major success factor for all printing presses from Fischer & Krecke is the high degree of automation, which supports fast product switching and therefore high flexibility. The core of the automation technology is an error protected Simatic S7-400F control unit (with CPU 417F), which performs both safety-related and “normal” PLC functions. The control unit communicates with the sensors and actuators of the various system components via Profibus DP and decentral peripheral equipment. It also provides for the precise coordination of the individual servo drives, with which the manufacturer has replaced the conventional drive technology formerly based on mechanical components such as gears and vertical shafts.

Virtually all functions of the Flexpress machines are controlled and monitored by the Operator Control System (OCS), which is based on the powerful Simatic WinCC technology. Touch panels have become the standard for the operation and monitoring of the winding and unwinding units; the panels are also connected via Profibus with the main control unit. User-friendly hand-held panels with a pulse wheel are available for fine adjustment and can be connected on both sides of the printer stand and in the print monitoring area. “On all our machines we use almost exclusively PLC, HMI and safety technology from Siemens,” emphasizes Harald Bollhöfener, Director of Electrical Design Engineering at Fischer & Krecke, “because this technology enjoys worldwide acceptance among our customers, in addition to being very reliable and available practically anywhere in the world.” This is underscored by the use of OP 17 Operator Panels at the autoclean units. Moreover, the consistent integration of the Siemens components is a crucial factor. This includes one-time input
Flexo Printing with Multilingual Controls
Totally Integrated Automation with Global HMI Concept

of data system-wide, standardized communications mechanisms and configuration and programming on an integrated platform (Simatic Step7).

“Such a relational and coherent system can, of course, be maintained and kept up-to-date much more easily than would be possible with heterogeneous solutions,” according to Bollhöfener. “This benefits our customers and we can use our engineering capacities more efficiently.”

Systematic operator control
With approximately 100 control screens and additional faceplates, the manufacturer has succeeded in creating a user-friendly interface that covers all process steps and supports all printing tasks. Function keys guide the operator from the central selection menu to the detailed sub-menus with many configuration options and displays, e.g. for setting up primary and secondary components, for the operation of the machine, for job management, diagnostics and service.

For first-time jobs, the OCS is used to set the web tensions for all areas of the machine based on the material parameters that have been entered. After input of the job data, all printers involved in the job can be moved to their print and register positions via one single switch. The job management function makes it possible to save and export job data in CSV format (comma separated values) for further processing, analysis and management with standard office software, especially in spreadsheets. Data can also be retrieved for repeat or follow-up jobs and transferred to the control unit by pushing a button; if necessary, also to other Flexpress machines, as long as they are designed for the respective job parameters.

The backbone of the job management system is the WinCC/ User Archives option; with little configuration effort, individual user archives can be created and the process data contained therein can be flexibly displayed via ActiveX controls. The automation specialists at Fischer & Krecke placed a high value on extensive diagnostics and service functions, for the straightforward, plaintext visualization of all operating states and errors and faster troubleshooting. In the event that the user requires assistance, the manufacturer’s service technicians can log in to the system via modem and tele-service adapter virtually anywhere in the world. “Our new Flexpress View tool has increased diagnostics capabilities many times over,” explains Ralf Bernhard from Electrical Design. “This takes advantage of Ethernet networking at the control level and enables Web-based access to the Proibus field level of the machines.” The basis for this is a Simatic CP 443-1 Advanced communications processor, which features a 4-port switch, double data throughput and extended safety functions.

Professional translations for export
In addition to primary markets in western Europe, the United States, Canada, Australia and New Zealand, Fischer & Krecke is increasingly concentrating on eastern European countries, especially the Ukraine and Russia. Business with the new EU members from the Baltic States is also developing very positively, according to Harald Bollhöfener. To consolidate and expand on the success of its printing presses in these countries, the company places a high value on straightforward operator controls in the required language.

The HMI systems from Siemens are already “multilingual”, i.e. they make basic system messages available in far more than 30 different languages, including Asian picture languages; usually it is possible to switch between three and five variants online. Other features include export and import functions for the respective configuration tools, so that all user-specific messages, captions and button texts for a project can be translated into other languages.

WLW Wagner Leisner Wolter GmbH, with its core business in industrial automation, specializes in just this area. For the translation of the user interfaces for the machines of Fischer & Krecke, it was beneficial that WLW has put its money on Siemens automation technology in the past years and is therefore familiar with the world of Simatic HMI. “We have worked intensely on the translation of user interfaces and have developed our own converter routines, which in most
cases make the procedure considerably easier, more efficient and more reliable,” explains Joachim Wagner, a partner at WLW.

With the help of these converter routines (macros), WLW uses Microsoft Excel to prepare the exported texts and tables in CSV format so that multiple occurrences of terms are filtered out, control characters are recognized as such and all texts for translation are clearly arranged in tables. For the translation of the texts and terms, WLW engages the services of experienced technical translators who are familiar with HMI terminology. The maximum length is automatically checked as a percentage of the original text or an absolute number of characters. Before importing the translation into the target system, the converter routines developed by WLW are again used to ensure code compatibility or to convert code into the format of the target system. Finally, the result can be reviewed in the actual user interface. This concept also facilitates subsequent corrections or additions during system maintenance.

WLW offers translations for the entire range of Simatic HMI and Scada products from ProTool to PCS7. Over the past years, the company has focused on the localization of extensive user interfaces for customers in various industries into the following target languages: Russian, Lithuanian, Portuguese, Spanish, Swedish, Czech, Dutch and French.

“The translation service of WLW eases our workload so that we can concentrate on our core competences. At the same time we have a partner from the automation industry who understands our requirements for a clear and functional user language that is in line with market requirements,” concludes Harald Bollhöfener.

For further information about this Siemens product in the internet click on:

www.siemens.com/wincc
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