Wood-work is evolving

Bottene Srl has been manufacturing woodwork machinery and systems for over 75 years. Today the machines are even more userfriendly with the help of Movicon CE.

Bottene Srl is a true Italian Industrial reality doing business at an international level by specializing in manufacturing crosscut saws and systems to do with woodwork. The company was founded over 75 years ago by the Bottene family in Schio (Italy), and through time has consolidated itself from a small local craftsman workshop into the industrial reality of today, a creative and dynamic North-Easten style company run by Giorgio Bottene.
Today the company registers a constant positive growth trend making its mark in the world due to its high product quality and technology.

The range of crosscut saw machines manufactured by Bottene Srl starting with the simple semiautomatic crosscut saws, to push crosscut saws right up to automatic machines with automated crosscutting, run by a computerized system.
Bottene has also diversified its activity with Bottene Automation, a parallel reality for supplying its customers all the automation necessary in manufacturing products, such as feeders, loaders, unloaders, handling, and production lines.
Bottene is known all over the world for its hi-tech production systems. The company strongly believes in innovation and this conviction is reflected in its avant-guarde machine control technology. The Bottene crosscut saw machines rightfully boast an above-the-average productivity not only for their experience in construction quality but, above all, in the operator interface systems used onboard their machines.
The range of Bottene cutting machines are used in hardwood production sectors. Thanks to their versatility, each client can set the sizes, the productivity capacity, and automation level for each model.
The Bottene cutting machines are particularly used as part of the wood packaging production for which Bottene Srl has developed intelligent crosscut saw models with accessories and software to run productions of the same series or different from each other.
Bottene Srl is also involved in another traditionally strong sector to do with door and window frames. In this sector, where companies produce wooden frames, there is a regular demand to integrate machines with the company's production system. Bottene Srl has provided their machines with the possibility to interact in network to manage lists of cutting information sent directly to the machines by company management programs.

The push crosscutter saws have a feeder conveyor belt system running on precision lateral rollers. This system works at lightening speed precision (up to 180mt./1') wood board cutting of all types in any thickness and length without any prior regulating procedures.
While being fed through, the boards of wood are checked for their length and any defects are highlighted with chalk consenting total optimization with minimal rejects. These machines can work with singular wood planks or stacks of wood planks fed along on lateral pneumatic chains which ensure a continuous feed up to a production capacity of 75mtc. a shift.
The optimization program allows wood to be cut at fixed lengths, elimination of defects highlighted with chalk and acknowledges and optimizes various sections.

The **optimizing crosscut saws** have an extraordinary production capacity of up to 20-25 mtc. of wood boards, crosscut into small and medium sections a shift.
The planks are conveyed along on motorized rollers assuring that constant contact is kept in order to accelerate their passage through and speed up work to 200 mt./1'. The machines do not need regulating and can work with boards of different thicknesses at

the same time.
The optimizing program permits fixed length cuts, the elimination of defects highlighted with chalk and to work with different qualities of wood. The board can be read and optimized totally or partly depending on the distance between the workstation and blades. The machines can be semi-automatic where the operator can select and mark any defects with a manual or motorized laser, or completely automatic for sawmill and pallet manufacturing optimization with automatic length and thickness calculations so that boards with different sizes can be worked on at the same time.

The adoption of intelligent versions in advanced software systems has allowed the range of Bottene crosscut saws to rely less on manual labor where specialized personnel are no longer needed and increase their productivity capacity with an overall considerable save in costs.

Supervision and Management Solution
Bottene was one of the first in its sector to apply Personal Computers aboard its machines, with the idea that by improving the operator management there would be an increase on client productivity. Until a short time ago, the average-high range of the company's machines, along with the PLC supervision unit, were also equipped with with a Touch Screen PC in industrial realization with a software purposely created in Visual Basic for managing and optimizing their wood cutting performances.
Today with focus on improving system interface reliability and flexibility, the company has decided to replace its PC with the traditional Windows98 VB applied with a PC based on Windows CE without hard disks and fan?
Based on the environment in which the machines work and their worldwide distribution, it was fundamental for Bottene Srl to get a highly reliable hardware solution and if possible the most economical to use. This necessity led them to evaluate the innovation which is making a firm stand on the Italian HMI market with positive effects: solutions base on Windows CE. These solutions are designed for PC architecture built with reliable propriety operator terminals, ensuring robustness in the aid of a CompactFlash instead of the usual once-upon-a-time hard disk and fans. These solutions provide a open operating system capable of guaranteeing the use of standard HMI software and the power to make the necessary calculations needed in optimizing wood cutting, united in openness towards company information system integration.
The solution used today involves the use of a Windows CE terminal with a Scada/HMI platform for Windows CE, as featured in Movicon by Progea.

A Techmark WinCE Touch Screen 10,4" has been chosen for comfort and comes ready with the Movicon runtime license integrated which guaranteed the company perfect integration between hardware and software without having to carry out tiresome installation procedures.
Bottene's aim was to maintain the application's calculation potentiality in

traditional PCs, to improve graphic interfacing, to become autonomous in project evolutionizing by abandoning custom codes in Visual Basic, and to be guaranteed with reliability, flexibility and openness to the world outside.
Historically, the machines are managed by a ELAP control unit, which supervises the I/O and the positioning of the axles. The control unit communicates by serial with an ELAP protocol, for which, on company request, Progea has designed a communication driver for the Movicon CE platform. This has allowed Bottene Srl to realize, with the help of a day course, the HMI project for the crosscut saw prototype in just five days, recuperating the previous relevant calculations for optimizing woodcutting and for dynamically displaying these cuts on video screen. The company's experience has demonstrated that by using a simple userfriendly platform, at a good price, has enabled them to sensibly reduce software management costs.
In particular, apart from the global reduction of project and maintenance costs, a satisfactory reduction in starting-up costs has also been registered. Today, only the services of one software technician has to be paid plus travel expenses whereas before a PLC technician and an expert PC programmer were needed to do the job.
Another great plus for the builders, is that today Bottene Srl is able to offer its clients an open technology, based on standards, capable of using the enormous potentialities offered on today's market. The choice of Scada platforms fell on Movicon, an extremely simple, powerful and scalable software capable of being implemented with the most bland solutions for low ranging machines thanks to the low cost CE solution. For the price of one touch screen operator terminal you can get much more sophisticated and open technologies.

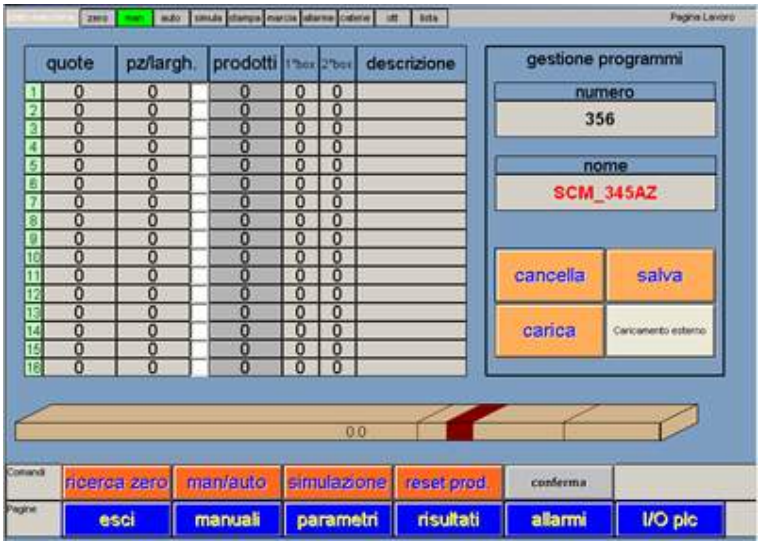
Harsh Working Conditions

Bottene's HMI solution is robust and simple to use. Hardware robustness and software reliability are the fundamental requirements in a hardworking and hazardous environment where such woodwork machines are used.
The wood crosscutting machines work in an extremely dusty environment due to the very fine sawdust created while the machine blades cut wood. In addition to this the machines work in an open environment, where temperatures and humidity swing between very high to very low.
In conditions such as these it must be guaranteed that the machines work well and that the operator only needs to use the PC as an interface to control and supervise the production.

Interface evolution

The supervision system guides the operator completely. The graphical layout of the interface has been designed to be user-friendly to an extent that no training is required by the operator using the machine. The use of the touch screen further simplifies system operativity. By means of using the graphic screen windows, the operator has constant control over the machine's status and production activity by using the supervision system's graphics potentialities to the full. For instance, apart from the general information the main screen also shows a design of the part to be cut and those set, to produce or simulate a virtual reality situation. Other screens show all the working parameters and can be used to set-up data and configure functions easily and clearly.

The production data, work cycles and recipes are stored on the PC and can be activated with a few clicks, without having to make any complicated maneuvers or configurations.
The Bottene crosscut HMI interface completely meets the needs of clients who don't like to 'beat about the bush' but want to get down to work straight by using simple to use and reliable machines. The graphical interface layout was designed in the third of the time that the old system took and, above all, the project adapts very quickly to client requirements.



One of the operator terminal screens based on Windows CE. The operator terminal is normally connected to the company network from which the list of items to be produced is acquired.

Remote control
PC availability aboard the machine, even when based on WinCE terminals, offers the manufacturers an option to install a modem, which can be used for controlling the machine at a distance. This allows the Bottene technicians to connect to the machine on client request in order to carry out diagnosis to verify errors by remote. This type of service aid is not only fast and efficient but also beneficial for both sides. Not only does it guarantee the user a quicker diagnosis, it also saves the expense of having to call or send a technical assistant out.

Movicon CE solution
This solution, based on Windows CE, has obtained the objectives requested: to provide operator terminals as hardware with Scada potentiality, in other words with a highly developed interface, simple and powerful programming environment, data openness with easy company information system integration. All this without being hardware independent and without increasing costs to meet propriety operator terminal expenses. Movicon CE has completely proved itself worthy by reaching all these objectives.

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