



Tannery automation systems allow for rapid handling and sorting operations for hides destined for various markets following the tanning phase.

Fast-moving leather: bulk management with individual treatment



Donning a precious leather garment represents a mark of distinction and, in many respects, a status symbol whose cost also depends on the long and complicated processes to which the leather is subjected before being released onto the market. Animal skins, even from the best origins, are not industrial products, but a by-product which presents peculiar characteristics which have a large influence on the leather's final quality.

A question of leather

Historically, segmenting hides was the norm to get the best use of the shape and structure, but this became less popular during the 20th century. In general large hides are employed for the manufacturing of upholstery in whole hide format, while smaller pieces of leather, such as bovine side leather are used for the production of footwear. During the tanning process, the whole of an animal's skin is normally treated, regardless of any eventual defects or faults, despite the fact that the animal's two flanks can present different characteristics or problems. Such peculiarities determine the value of each hide, and because of this factor, it is now once again being recognised that there is value to be gained by cutting and separating the primary material based on its quality. Feltre, based in Chiampo, in the province of Vicenza, Italy—a major exporter of tanning machinery world-wide—specialises in this very task. Installations such as these, known as tannery automation systems, allow for the fast and efficient sorting and transfer of hides, thereby speeding up operations in the production plant and enabling more effective stocking, conservation and shipment of the material.

Everything in full view

The task of separating hides and identifying their special characteristics still cannot be performed by automatic machinery,

but must be entrusted to an experienced operator. For this reason, in the past, the person doing this had to move about the tannery, amongst pallets stacked with hides which were transferred manually. This was a very demanding job from a physical point of view, marked by a level of productivity that was far too low to be considered acceptable for the rhythms of modern industry. This gave rise to selection lines, which pick up individual hides that have already been treated and transfer them directly to the grading station, and also provide the operator with information on the size of the hide, its thickness and weight. This system prevents the operator from having to move around continuously and by merely pressing a few buttons, they can remain focused on the work at hand, grade and evaluate each hide, and decide its end use. What's more, the operator can decide whether to cut the primary material into side leather or keep it as a whole hide. All of this takes place under controlled lighting and without the operators having to move from their work station. They simply use a series of commands, depending on their evaluation, and the hides are then automatically conveyed onto different pallets.

Fast yet controlled handling

Transferring a hide from a processing machine to a pallet rapidly without damaging it is not, however, a simple task. Each hide differs from the next and the handling operations are assigned to a series of conveyor belts which, advancing at different speeds and under constant control, lay down each individual hide and position it along the sloped surface of the selection station. The operator can then evaluate it and grade the quality of the hide by touch. Advanced handling technology has reduced the grading process to a few seconds.

The operator, can decide whether to dissect the hide and which stack to send it to by simply pressing a button. Feltre's ►



FAST-MOVING LEATHER: BULK MANAGEMENT WITH INDIVIDUAL TREATMENT

field of specialisation lies precisely in the selection of hides and their movement from the selection station to the pallet, along with an innovative cutting system. The handling of such differing varieties of hides is an especially delicate operation, since inept transferral can damage the product. This is particularly relevant when the hides are very large as they must be carefully folded and positioned precisely on the final pallet. Unwanted folds, cracks and cuts will form if hides are not perfectly stretched, which will render them unusable or reduce the quality of the product. In today's modern industry, speed in execution and overall efficiency are instrumental competitive factors. In addition to performing tasks which are qualitatively analogous to those carried out by human operators, an automated handling system must offer a guaranteed and rapid operation. Furthermore, in order to ensure the product's perfect positioning, the pallets rest on a platform which compensates for their height, depending on the load, and determines the removal and immediate replacement of completed pallets. Feltre's totally automatic transfer system allows operators to remain concentrated on hide sorting and grading operations, while the machine moves the products autonomously, selecting where to transfer the hides to when one of the pallets is complete and must be removed.

Single supplier offers the best solution

Feltre's works with Rockwell Automation, the American hi-

tech multinational firm which groups together prestigious brand names in the industrial automation sector, such as Allen-Bradley, Reliance Electric, Breter, Guardmaster and Rockwell Software to provide solutions to these delicate tasks. This choice resulted from a wish to work only with one supplier to obtain the necessary electromechanical and electronic components for such equipment. In addition, Rockwell Automation's world-wide servicing network makes tracking spare parts fast and easy when needed, as Feltre's machines are exported around the globe, and are designed to run for decades.

High productivity is not just linked to rapidly traceable components, but to handling speed too. Automated solutions proposed by Feltre allow for the movement of hides at speeds of over 100 metres per minute, guaranteeing tanners excellent stability for the leather and the possibility of analysing up to six pieces per minute. In addition, as company owner Domenico Feltre explains, "Rockwell Automation provides the security of a brand name that is recognised and esteemed world-wide, offering further guarantees of quality for those who choose to innovate their production facilities with one of our automatic handling units."

Assistant marketing manager Luca Tisato admits, "The decision to make use of special innovative tailor-made solutions compels us to keep our level of know-how continuously up-to-date, which is not simple, but it does allow us to offer our customers quality solutions that are at the vanguard of

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technology and enable them to be competitive, above all in facing the aggressive competition posed by emerging nations.”

A machine for every need

By definition, a tannery is an especially hostile environment, both because of the presence of corrosive chemicals, and because, typically, the operating personnel are often not trained in the intricacies of the machinery. It is therefore fundamental to set up a system which, in addition to being robust and well-built, is also capable of offering the level of operating simplicity that will allow less skilled personnel to work on it. The operator interface, with the PanelView 600 plus, is user-friendly and easily used, as it can even be used by operators without specific training. In fact, on some equipment, the operator needs only to select the animal type to prompt the machine to automatically modify a series of operating specifications enabling it to adapt to the special characteristics of the product being handled.

Automatic hide handling solutions are generally inserted into production departments that are already operational, rather than new build. For this reason, a standard machine does not exist and each installation is adapted to the space and needs of each and every customer.

As Francesco Antoniazzi, electrical systems manager, explains, “More specifically, after having successfully employed the SLC 500 series PLCs, for a few months now we’ve been implementing

CompactLogix which, thanks to its high response speed, provides an optimum support for the functionalities of such a machine, on which up to six selection stations operating in parallel can be created.”

Furthermore, thanks to the broad range of products available from Rockwell, Feltre’s technicians can at any time identify the ideal components needed to respond to the requirements of each individual machine, without having to accept compromises or make use of inadequate solutions—a characteristic which enables the realisation of particularly efficient and reliable solutions, capable of managing even the largest or most delicate product batches.

Programming made easy

The decision to invest in the design of customised—and therefore difficult to reproduce—machinery allows Feltre to remain competitive even in the difficult times that the leather sector is facing. The option of building and designing machines which are customised to the specific needs of each customer is also achieved through the programming simplicity of the control platform. In addition, using Internet solutions offers the possibility of providing remote servicing, a feature which is greatly appreciated by customers, who feel reassured by the support of a technician and by the immediate help provided on software problems, for which they normally do not have internal personnel. 



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