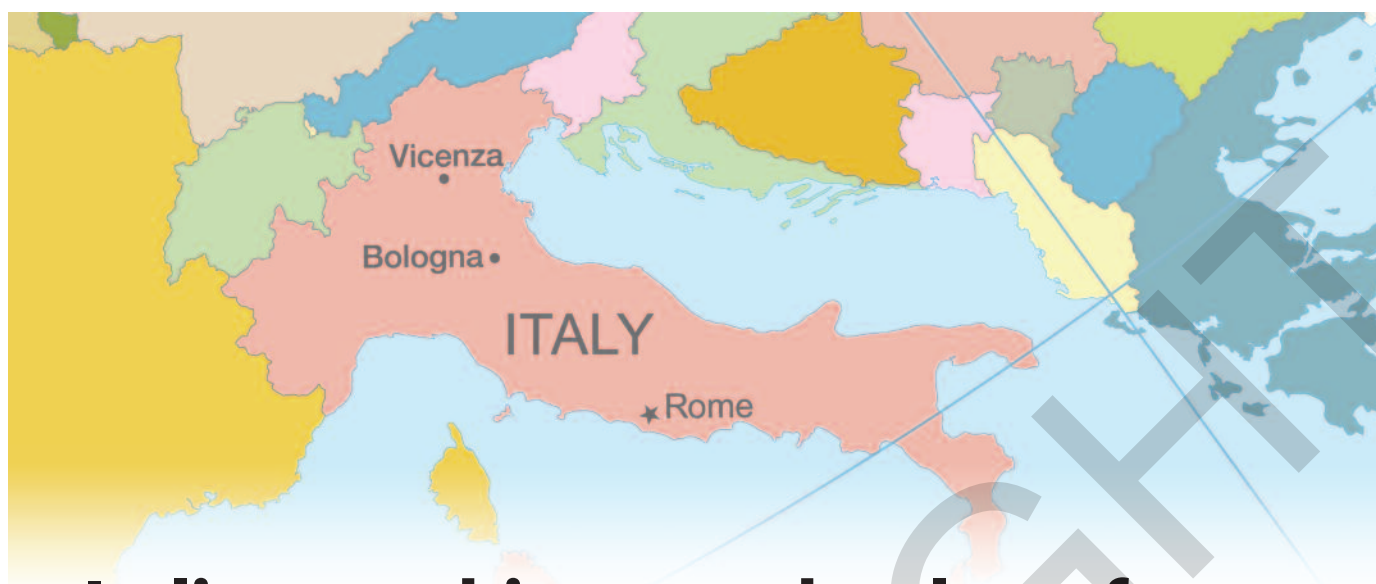




Italian machinery technology forges ahead on quality and innovation

It wasn't that many years ago that serious concerns were being expressed about the future economic health of the Italian tannery machine industry, and its ability to survive, as more and more of the European tanning sector closed, contracted or moved overseas. Contrary to some expectations, the Italian industry quickly adapted to the new reality; manufacturers continuously updated and improved their designs and construction, as well as developing fresh concepts, machines and control systems. Tanners too have realised that quality counts in terms of the leather they have to deliver and that utilising "passable" quality of machinery does not meet customer demands.

The unquantifiable advantage that Italian machine builders have over their competitors is that nearly all of them have their bases in the heart of leather producing areas and tannery clusters, with the ready opportunity of discussing, testing and trialling new developments. Italian tanners are still acclaimed worldwide for their quality productions — and that depends as much on the machinery as on the chemistry and their own skills.

Three prime examples of innovators in the Italian tannery machine sector are included in this feature: Equitan, Bergi and Selin.



The new plant at Chiampo, a few miles north of Arzignano in Vicenza Province.



Antonio Antoniazzi.

EQUITAN — from small beginnings to international supplier

Fifteen years ago, in the spring of 1998 Antonio Antoniazzi decided to start his business. He had noticed a serious gap in the tanning industry: while machines were becoming more sophisticated, there was a decided lack of support services for the tanneries that were investing in the new generation systems.

In those barely 15 years, he has grown his company, today recognised as Equitan, from its small beginnings

into an international supplier of tannery equipment and service componentry.

In the late 1990s, vibration staking machines were becoming an accepted tool in the industry, raising productivity along with leather quality but a need to achieve their working life without deterioration was increasingly obvious. Critical, it became clear, was the endurance of the highly stressed elastic transport belts together with the static electricity created during the staking action causing the adhesion of dust particles to the leather being processed. Recognising a market opportunity Antoniazzi began development work focussing upon this problem.

Dust free

By 1999 he was able to offer a new type of transport belt manufactured in a material containing an antistatic fibre structure able to discharge the static electricity generated by the leather staking action. The belt was introduced, patented and registered with the name Condux. When using this belt on



The dedusting machine removes dust from the grain before or after finishing.

vibration staking machines no dust adheres to the leather and its service life is extended compared with that of other types of belt.

By late November 2001, buoyed by the success of his new product, Antoniazzi was able to achieve a long-held goal. He established Equitan Srl, which was to become the springboard for growth based on intensive development of the Conduflex concept, together with other systems dealing with the dust, a aggravating production problem found in tanneries worldwide.

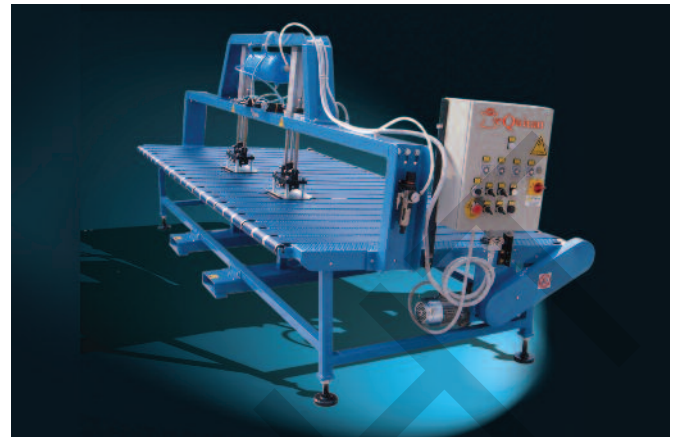
Initially a further five versions of the original Conduflex to suit a variety of clients needs were perfected, chiefly connected with the enhancement of conductivity and responding to the requirements of leather quality as well with the function of the staking machine. A new double fabric conducting material with carbon fibres and carbon interlaced, marketed as Conduflex, is suitable for applications where leather processing between felts takes place.

“At the same time we became interested in conveying systems in leather processing equipment generally,” says Antoniazzi. In this field, Equitan has created a comprehensive range of elasticised and hot welded polyurethane transport belts in various widths — users are given the opportunity to tailor belts to suit their own particular applications with the aid of a hot-welding kit, an accessory also available from Equitan,

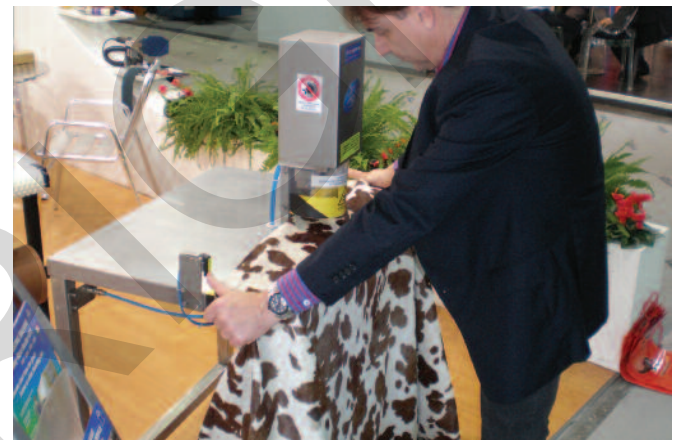
Innovation and diversification

Profiting from a now established market presence, the company began to look at further product diversification. A manually operated stamping device for the marking of raw skins, as well as limed and wet blue, was developed in 2005 followed by a more powerful unit that was introduced at Tanning Tech 2012 especially suited for bovine raw hides in a green or salted state. In the field of instrumentation, an electronic substance gauge designed to transmit and receive data by wireless has also been introduced.

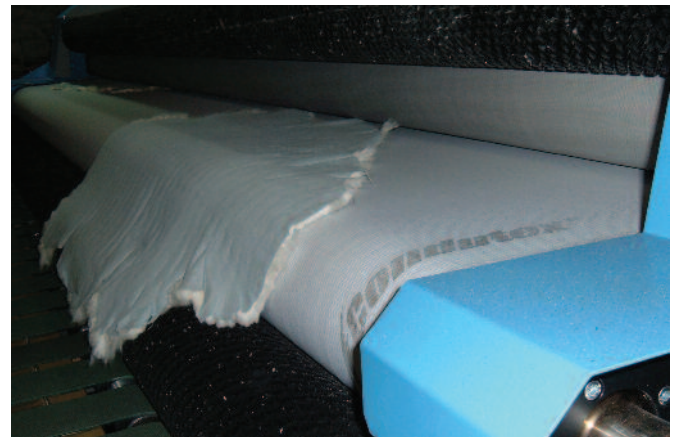
Turning again to the dust elimination problem, a separate dedusting machine was launched, developed and subsequently patented using a relatively simple concept not requiring fans or filtration. This machine has an upper adhesive belt that collects dust from the grain side of leather as it feeds through. The lower transport belt system uses Conduflex, another carbon fibre type, which is capable of discharging any latent electric charge generated in the leather. The adhesive belt is continuously washed and cleaned. Further research in felt construction then led to a type of felt for ironing and



A twin stamping system, mounted on a special work table.



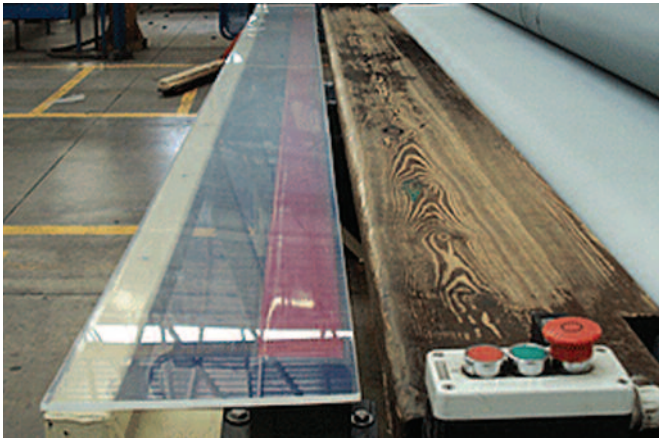
The new stamping pneumatic device which can mark up to eight digits. Specially developed to mark wet blue, limed and raw hides.



The Conduflex Heavy Belt, one of the family of antistatic belts developed. Thick and tough, ideal for extreme working conditions, it has a small seam to avoid marking the leathers being processed.

embossing presses always with an antistatic property. Further advanced properties felts are being studied, one for application in finishing and the other for wet stretching. Development of a fresh concept of a leather softening machine is also foreshadowed.

Reacting to client's thoughts concerning efficient functioning of vibration staking machinery, a unique method of measuring this has been devised by Equitan. Briefly, this is based on a plastic material sheet that, once deformed, retains its new shape



Metal detecting bar fitted to a throughfeed vibration staker.



Wireless electronic substance gauge.

and dimensions. This sheet with known dimensions is fed through the staking machine where it changes shape and dimensions. When comparing the deformed sheet with its original form and dimensions it is possible to assess the efficacy and functioning of the staker. A patent application protecting the system was applied for and, we have learned, granted without delay.

Equitan includes many important tanners worldwide amongst its clientele, as well as a number of European tannery machine manufacturers, all appreciated for providing the stimulus that encourages its investment in research and innovation. And with its commitment to quality and customer service, the company is convinced that its efforts will continue to be rewarded.



Compact scissors lift.

BERGI S.P.A. is our second example. This company, established in 1965 by its chairman Giovanni Bergozza under the name "Officine Meccaniche OFB", to develop and produce a range of leather finishing machines, now has 40 years of high visibility presence in the market. In 2004 the company name was changed to Bergi S.p.A., with one of its principal products, buffing and polishing machines introduced in 1974, continuing to be a mainstay of the business.

In 2005 Bergi created a new division to commercialise and develop its products under the name Bertech. Its remit is to engage in the design, development and manufacture of reliable stacking machines as well as specific versions capable of

satisfying special stacking requirements. In addition, commercial and technical Bertech staff study advanced wet blue hide handling lines and selection systems before and after sammying. This division also specialises in the development of flexible bundling devices for finished leathers being prepared for despatch.

Stackers with touch screen programming

A Bertech product leader is a leather staker designated the Dynamic. Very much the latest generation, it combines the most advanced elements found in this field and is aimed at the user looking for a machine that performs as well as or better than manual handling. By its very nature, a stacking machine is a complex device with its components required to stand up to a vast number of repetitive movements. To resist wear and tear over a long service life, solutions have been found, such as separate rising and descending tracks of the trolley, constructed in aluminium members with chrome plated rails and on ball bearing running concave wheels. This technology supports the machine's extended working life with a minimum of maintenance requirements. Other critical components are the rails fixed to the arms carrying the mobile conveyor. The rails are made in a synthetic material and, when worn, are easily replaced at minimal cost. Another reason for opting for rails in a synthetic material is to reduce the wear of mobile belt conveyor guide gearing.

Touch screen programming and control is provided, which



Bertech Stacker with one arm raised.



Bertech Stacker in operation.

also visually identifies defects and their location. Bertech is aware that defects possibly arising on a stacker may be dangerous; therefore safety is a primary consideration. For example, to avoid damage or injury in the event of the mobile belt conveyor hitting an object it incorporates an anti derailing system that prevents derailing by means of a safety double security rail. The machine can also be fitted with a device which would prevent the lifting element from dropping in an uncontrolled way in the event of a mechanical failure.

Bergi, true to its record and status in the area of buffing machinery, has upgraded one of the buffing machine models in its range with new accessories to make it a universal tool capable of handling specialist applications. Particular attention was given to nubuck production techniques and suede buffing. The 'Nabukka' buffing machine was created and there is a version which has a larger diameter buffing cylinder to cope with the heavier substance leather that is frequently used for nubuck and suede leathers. Increased rate of removal of grain with coarse grain buffing paper or a smoother finish with fine grade paper is achieved as a result of the larger area of working contact and less pressure on the leather due to the use of the larger diameter cylinder.

Amongst significant elements part of the new development is controlled cooling of the buffing cylinder by means of closed circuit water circulation that avoids overheating as well as prolonging the service life of abrasive papers reckoned to be in excess of 20%.



Bergi Buffer 18.2



Wheel type measuring machine with exotic skin precision measurement device.



Detail of Millimir exotic skin measurement device.

SELIN PROJECTS S.R.L. is the third innovator cited in this review. This engineering business is respected by the international leather market for bringing much of the electronic and information technology to the sector. The company's strength lies in its thirty years of experience rooted in development and production of measuring machinery and the electronic management of finish spraying apparatus along with other hi-tech electronic equipment for their clientele.

The research into innovative technical solutions—an ongoing improvement of function and purpose of its products—and focusing upon quality combined with reliability of the adopted technology are our watchwords, says Engineer Gosio, the principal of the Selin business.

From electronics devised to update classic pinwheel measuring machines to electronic system conveyor belt and wheel type detection machines, Selin progressed to patented inventions of equipment such as thermal printers and a vacuum conveyor system for throughfeed measuring machines. These are current, technically valid and a benchmark in the tanning field. The latter ensures a firm hold on the conveyor, a feature, that according to the company, is important when measuring leather for fashion articles.

The company's present range includes a large variety of both conveyor and wheel type model measurers as well as area and substance electronic measuring equipment. Further, hardware/software formulations are provided integrating measurement, selection, identification, barcode labelling together with production data systems. Precision spray economisers capable of being linked to batch production control and finishing product consumption data is another arm of the business.

Of particular interest in the range is an exclusive opto-electronic measuring system with millimetric accuracy for the measurement of precious skins such as those of reptiles, pythons, alligators, iguanas and similar. The device, trademarked Millimir, with a working width of 400mm and using optical sensing is ready to be connected to a standard wheel type electronic measuring machine. ●

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