

# New age of the machines

*Leather International* takes a foray into what's new in the machinery sector, highlighting technological advancements, the latest products, standards of quality and a glimpse at what's next.

**S**imac Tanning Tech in Milan is the bellwether for machinery throughout the industry, and February's edition was no different. It showcased new machinery and technologies with an ever-stronger focus on energy and eco-friendly performance, and companies committed to reduced environmental impact. To this end, Simac Tanning Tech saw the official presentation of the 'Supplier of Sustainable Technologies' project, its main tool being the 'Green Label'. With 17 companies having already joined the project, another 25 have embarked on the procedures to obtain a label.

The 2018 edition ended with greatly increased visitor numbers, with figures up 18% when compared with last year. We're now closer to the 2019 edition than the last one – and still in the grips of a glorious European summer – but it's the right time to take stock on the state of modern tannery machinery, and its place in the greater context of supply and demand. Italy's leather machinery and technology sector in 2017 alone, for instance, has reputedly increased by over 10%, in production and exports.

This is not a complete list, but it highlights a few companies that are setting a new standard in quality, advanced technology, future-proofing

with attention towards trends and customer demands. There is a lot of uncertainty out there across the supply chain, and the list of pitfalls is getting longer every day, but the industry is getting more coordinated, and the thriving machinery sector is doing its part to provide clarity and universal growth.

## **Erretre's new cold-milling technology**

Since the early 1980s, Erretre has been making milling drums that can produce soft leathers. Many of those leathers have included the so-called vintage-effect, which gives a beautiful pebbled grain that has real-time visualisation of the

Zünd's G3 cutting machine.

drum parameters consistently met market needs. In recent years, automotive, furniture and aircraft upholstery-makers have been asking for leathers that are pebble-free and flat, but tight-grained to allow maximum cutting value. These non-textured leathers are achievable in Erretre's new milling drum, and the vintage-effect leathers are also achievable in the same drum. The new milling drum allows the non-textured leather through a unique engineering design.

Air humidity control, while maintaining optimal temperature for milling air and leather, is a technological challenge for most milling drums. These controls have been at the core of Erretre technology since the late 1980s.

Brand-new cold-milling technology keeps the leather cooler and the air humidity optimal, using patented technology that allows for the production of tight-grained articles. Many leather markets currently require soft, tight-grained leathers, especially from organic tannages. As many organic tannages are particularly heat-sensitive, the control capabilities in most leather machinery needs to be improved, and milling is no exception. Automotive leathers that are chromium-free can be quite challenging to produce, as the leather often dries out in the milling process. This can be easily controlled by the discrete measures used in this state-of-the-art milling drum.

The Erretre cold-milling technology makes use of the leather moisture adjustments and ensures optimisation of the glass-like transition temperature variables of the leathers to make certain that the leather break is optimised. In other words, the temperature and humidity are carefully controlled, as not to affect the sensitive leathers. Cold-milling technology, as an operation, has many other crust and finishing benefits as a result of several technological breakthroughs.

Optimised automatic unloading and door control, a programmable recipe, historical file storage and real-time visualisation of the drum parameters are typical features of the Erretre drum. The cold-milling software also uses statistical analysis to obtain more than just the obvious parameter. Industry 4.0-compliant algorithms allow the user to get metrics from mechanical and psychrometric detectors to obtain deep understanding over how the physical properties of the leather are changing. These new possibilities allow the tanner to make leather-property-related decisions – remotely or in situ.

### The CRC drying of tomorrow

In the entire range of drying methods that are available to the tannery cell rotary conditioner (CRC), this is a next-generation drying method. Cell-rotary drying is a batch-modular

method that places a large number of hides or skins into a cell and dries them using tightly controlled parameters. The method has the ability to dry leathers of different thickness, different tannage types, or have different parameters in the machine at the same time. A machine that allows flexible working, tailored to the company's shift and working behaviours, is one of the many features of this high-precision machine.

Strain control using set displacement lengths, like that seen in conventional toggling methods, can give rise to variable stress in the leather while it dries. Temperature, humidity and airflow are constantly adjusted for consistency, allowing repeatability of the drying operation and make the drying conditions independent from the outside air conditions.

High consistency of chromium-free material is possible due to the quality and process control capability of the CRC – leading to increased cutting yield and predictability. The grain surface is more open in structure and naturally textured, allowing increased quality of finish adhesion and the production of semi-aniline upholstery leathers. The CRC allows leather articles to be unique, distinctive and natural, which is hard to emulate in other drying types.

Big data allows real-time information to be streamed to remote or local devices so that adjustments can be made to the machine in a live format. Measurement of the data and machine-learning adjustment allows the machine to consider the drying requirements of each individual piece of leather. The leather tells the user how it wants to be dried, allowing much greater uniformity and feel.

### Elitron – a cut above

Elitron launched the new Kudos conveyor cutting system in 2018. Specifically engineered to perfectly cut leather and synthetic roll materials for footwear and leather goods, two gantries and two multitool cutting heads distinguish this highly innovative, high-performance technology, with faster acceleration and cutting speeds, which increase productivity by 40% compared with the previous model. >>



Erretre drums also have a range of technological features, such as real-time visualisation of the drum parameters.



Erretr machines use algorithms to collect data that give a complex understanding of how the leather is changing.

This robust and compact system comes in two widths – 1,600 and 2,000mm. Since Simac Tanning Tech in February, sales have grown fivefold with systems installed in North America and Europe, bringing the total installations worldwide to over 2,000 in 50 countries. Tailor-made demos also take place in the Elitron showroom in Italy.

These are impressive numbers from a company that has been in the production of cutting plotters and CAD software for more than 25 years. From 1984, technical experience has been continually fed by investment in research and technological innovation, as well as original insight. This has resulted in innovative products and technologies, which in many cases represent exclusive Elitron patents. Solutions exceed the limits of traditional production systems, completely automating the production process and generating new business opportunities. With an in-depth knowledge of the leather industry, the company today produces specific solutions for many sectors, such as footwear, leather goods, furniture, composites, rubber and foam.

Elitron's expertise is clearly identifiable, with cutting-edge electronic and processing technologies, such as electrical and pneumatic oscillating knives, milling tools, creasing tools, laser (cutting, engraving and marking) and water-jet. Technical assistance, directly managed by Elitron in collaboration with local

and international partners, provides a quality and timely service.

Dedicated to the upholstery and automotive markets, the Plaza TH systems tick all the boxes for increased productivity, with full working areas up to 6,200x2x500mm. Two gantries and two multitool cutting heads are able to cut one full hide using two cutting heads simultaneously, guaranteeing non-stop production; cutting on one side while nesting on the other, and then collecting the pieces on one side while cutting on the other. Both the Kudos and the Plaza TH come as standard with Elitron's dynamic-vacuum system for effective material hold.

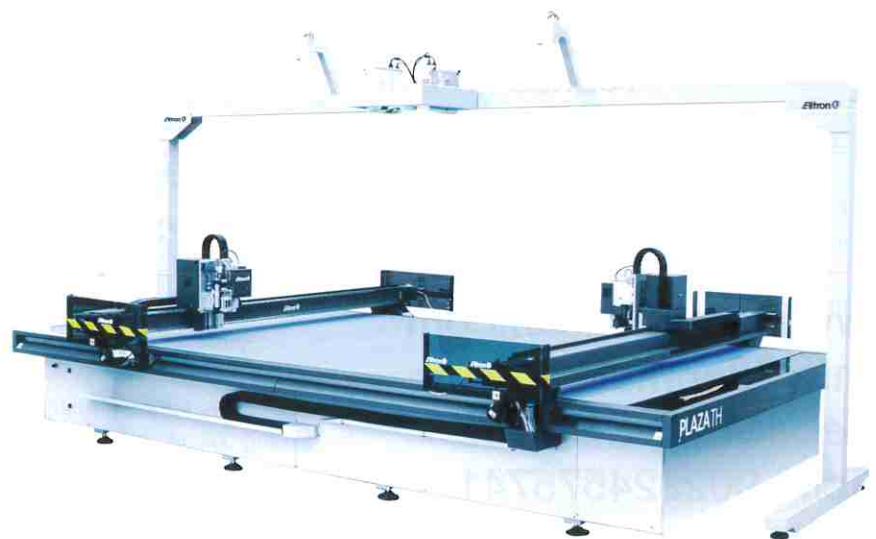
Nesting can be carried out manually using a video-projection system or automatically, to accelerate any pre-cutting preparation. Elitron offers the innovative, automatic nesting

software OPERA, for roll materials or leather hides, with the best possible yield calculated automatically; or, alternatively, the most advanced and innovative NesCUT software identifies printed logos and patterns, and nests accordingly to guarantee perfect alignment.

### Deri-Maksan Group's fleet of new machines

Deri-Maksan Group provides turnkey tannery projects, establishes and operates the factory, gives processing training to the employees of the new factory and promises leather that is manufactured in-house. The company – the leader in its field in Turkey – adds features to its products by following developments in the machine industry and needs of tanneries. For example, decreasing and controlling the costs and profits of businesses are the most important concerns of the owners and managers. Deri-Maksan Group knows these concerns and gains appreciation of its customers by providing services considering their needs.

As known, the most used input in spraying machines is dyes. To calculate and control dye consumption, a weigh bridge is equipped to the machine. In addition to this, diaphragm dyeing pumps have the system to gain the dyes. A tannery that uses Deri-Maksan can easily calculate dyeing cost and decreases harmful effects of waste to the environment. Moreover, speed controllers, which have not been used



Elitron's innovative cutting solutions have seen the company's sales grow fivefold in under a year.

on any spraying machine up until now, are applied into drying cabinets of spraying machine. With this system, speed of rotation can be controlled according to thickness of leather.

Useful features on Deri-Maksan machines are not just limited to its spraying machine. Its automatic toggle machine has advantages, too. Instead of two gears, four are equipped to the bearing system of the machine, so the durability has been doubled.

Lastly, its measuring machine can measure and print areas of leather at a plethora of measurements and sizes.

### **Aletti – a qualitative leap**

The new belt-buffing machine for whole hides was presented at February's Tanning Tech 2018, arousing great interest in the new possibilities of finishing, especially in improving the employability of less valuable leather.

Thanks to the new quick-change system of the feed roller, Aletti's Ultrabelt can quickly be adapted to any type of buffing requirement by changing the hardness of the rubber coat of the feed roller, in accordance with the finishing purposes.

On the new belt-buffing machine, Aletti has studied the possibility of an easy and very wide variation of all the sanding parameters, adding various programs to slow down the feeding speed of the leather and automatism of the leather holding devices.

“ Never afraid to be at the forefront of modern technology, Alta Zapateria recently purchased a Zünd G3 cutter, an investment that made digital cutting a key part of the company's production workflow. ”

All the advantages of the belt-buffing technology, such as flawless buffing, paper durability and lower costs, are now finally available for whole hides, to allow a significant qualitative leap in buffing industry-wide. And due to the concentration of controls on the panel in front of the operator, the various programmable grinding configurations, and quick replacement time of the



Aletti's machine has brought all of the benefits of belt-buffing technology to the whole hides market.

abrasive paper and of the feed roller, the use of the new belt-buffing machine has become much simpler and safer than traditional roller-buffing machines, even for non-specialised operators. After testing all the components and fine-tuning the controls, the Ultrabelt is ready to be put into production, ensuring total reliability and a superior quality of buffing.

### **Zünd's high-tech cutting system**

Initially a small, high-quality shoemaker, Alta Zapateria had a breakthrough in the market when it produced its high-end Goodyear welted shoes, sold under the Carmina brand name. Today, Alta

natural cork compound and the sole is stitched to the welt from the bottom.

Never afraid to be at the forefront of modern technology, Alta Zapateria recently purchased a Zünd G3 cutter, an investment that made digital cutting a key part of the company's production workflow.

One of the primary reasons for this acquisition was to preserve the company's many proprietary templates in digital form, which can now be done. Until that point, innumerable cardboard templates were stored in boxes, requiring maintenance and a level of organisation that became increasingly arduous and complex. By digitising the company's exclusive templates, Alta Zapateria has been able to significantly increase production security.

What's more, implementing model changes or modifications of existing templates has become a lot quicker and easier. It also allowed the company to increase the precision of the leather-cutting process and speed up the time-consuming punching operations dictated by intricate hole patterns.

The Zünd G3 cutter is used for all kinds of cutting patterns and templates, as well as for production. Only particularly challenging leathers, such as the extremely tough shell cordovan, are still being cut by hand due to the variations in thicknesses. ■

Zapateria figures among Spain's leading shoe manufacturers, with retail stores from Paris to Honk Kong.

Each Carmina shoe is handmade in a manufacturing process that may involve as many as 300 production steps. Using the so-called Goodyear welt technique, a strip of leather – the welt – is first stitched to the upper. The resulting gap is then filled with a