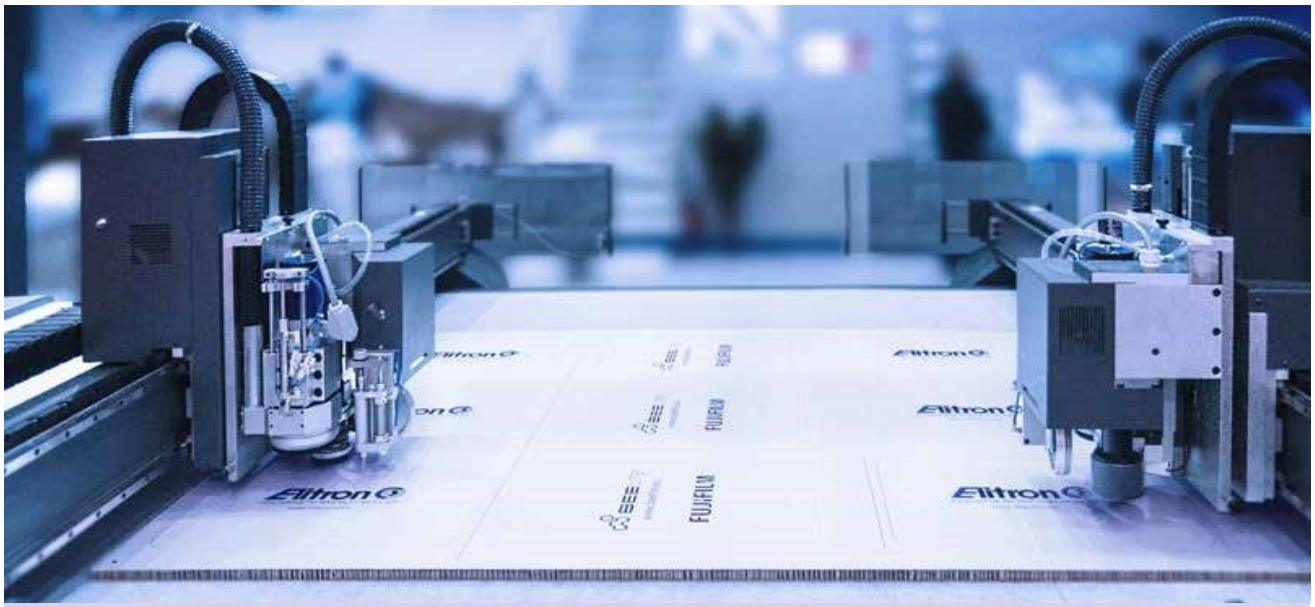
Technology, Creativity and Innovation for improved Productivity

Elitron: The cutting edge of cutting equipment

By **Ton Rombout**



Elitron-Kombo systems, based on long term technology.

> **"A cut above the rest"**

Having its origins in the shoemaking industry, as time went by Elitron became an important developer and manufacturer of CNC Automatic Cutting Systems. Based in Italy, the company now operates in a global market, offering a complete range of industry specific solutions for leather goods, upholstery, technical materials and increasingly visual communication, including cutting tools for digital printing, sign & display and packaging.

They are suitable for the finishing of both short and complex production runs, and offer maximum versatility whilst excelling in terms of productivity and automation. Elitron designs and manufactures open source finishing solutions that fulfil all requirements in terms of preparation, design and cutting, milling, creasing or engraving jobs and make every workflow more streamlined and seamless from start to final product.

Two product ranges

A complete range of Kombo plotters for automatic cutting and finishing, specifically engineered to meet the new requirements in the digital printing, cardboard, sign and billboard industries in our market segment, is available and able to connect to third party front or back end systems. To simplify the overview Elitron's product portfolio is divided into two different product categories:

1 – Digital printing and Sign & Display

For this segment Elitron developed the Kombo SD Series with one gantry, which includes the flatbed Kombo SD+ and the Kombo SDC+ with a conveyor driven working area that facilitates a continuous workflow on roll materials such as vinyl or synthetic textiles. The Kombo TH is the third solution, larger than a Kombo SD+ and featuring a double independent gantry, aimed at those sign makers who seek a leap in productivity.
These models incorporate a high level of flexibility because of the many tools that can be fitted into their cutting heads: milling router, electric (or pneumatic) oscillating blade, creasing wheel, V-Cut, Kiss Cutting (for vinyl), etc.

2 – Packaging
The Kombo EL, Kombo TAV and Kombo TAV-R are the cutting solutions designed to work mainly on corrugated, carton and 'softer' materials used for POP/POS displays and/or for manufacturing boxes.
The Kombo EL is the basic solution for box manufacturers, who want to diversify from die-cutting technologies and make a first step into the digital world.
The Kombo TAV is the fully automated cutting solution, which is designed to meet the two main requirements of the cardboard and digital printing industry, i.e. non-stop production and easy adjustment to quick turnaround jobs.
The Kombo TAV-R is the finishing automation state-of-the-art. It's the only finishing solution capable to deliver 24/7 productivity for packaging and corrugated.

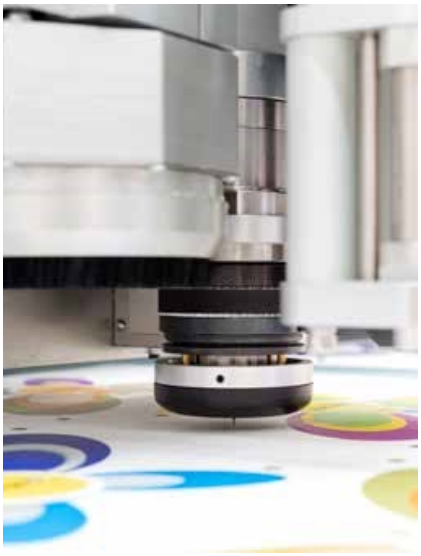
Let's take a closer look at these systems

Sign & display/large format printing solutions

KOMBO SD+
Specifically designed for the majority of visual communication related applications as well as the packaging and cardboard industry, the cutting systems in the Kombo SD Series are the key solution for the digital printing industry. Their extreme flexibility makes these digital cutting systems suitable even for working on leather, foams, textiles and hard or complex media such as aluminium or plexiglass. Standard Tools include an Electric Oscillating Blade Tool (cuts faster than a fixed blade, has a longer service life and is specifically used for medium to soft consistency materials or to carve out details), a 1kW Routing Tool, a Marking Tool (to draw or mark guidelines, symbols, lines and text on media) and a Laser Pointer Tool (to quickly identify the media zero point when there are no reference marks or printed references).

Optional Tools include a Pneumatic Oscillating Blade Tool (supports blades with a thickness of 1.00 mm, particularly recommended for the processing of hard or very thick materials such as foam or gaskets) and 3kW Routing Tools (for vertical cutting using a high frequency milling bit). The router is air cooled on the 1 kW model, or liquid cooled on the 3 kW model. The system also includes a Kiss Cut Tool (with micrometric cutting height control and a diamond core bit to cut pre-spaced vinyl or thin paper and card stock without damaging the liner material), a 45° V-Cut Tool – (to apply an incline cut into materials that cannot be creased), Creasing Wheels (create a folding crease by applying pressure onto the surface of the media) and a Circular Blade Tool (a motorized disc blade that cuts natural fibre, plastic or composite textile materials at high speeds).

Elitron-Kombo TH features a double gantry technology with 2 independent cutting heads.


Elitron Kombo SD+ multi tool cutting head with up to 5 tools at the same time.

Kombo SDC+ 3.2
The Kombo SDC+ 3.2 is fitted with an automatic conveyor working table for the cutting plotter and the Elitron technology Seeker system. Equipped with a 3200 x 2100 mm working area, the Kombo SDC+ 3.2 works effectively with both large rolls of material and different types of rigid media coming from the larger size digital printers, with an excellent price/quality ratio.
The Kombo SDC+ 3.2 is part of a new platform designed by Elitron to integrate and automate the workflow with super wide format digital printers.

Kombo TH
Combining innovation, technology and ongoing investment in R&D, the Kombo TH is a 'Super Plotter', which features double gantry technology with 2 independent cutting heads that can achieve a 70% increase in productivity. Designed to accommodate industrial workloads and high production volumes, the Kombo TH can also work on different materials simultaneously. Equipped with Smart Twin Cutting Heads the software balances the workload of each cutting head in order to minimize the overall throughput. The software dynamically optimizes and reduces the cutting time to a minimum. Each cutting head can also be set up with different tools, which dramatically reduces overall set up times and further enhances the cutting system's versatility.

To further boost the productivity of these solutions, Elitron has come up with the following add-on technologies:

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Elitron Kombo sdc+ with seeker system.

Seeker System
This innovative vision system was designed, developed and patented by Elitron. It automatically identifies printed images and recognizes the location of printing reference points on materials to completely automate the digital finishing process. After selecting the image to be shaped an additional camera, placed on the cutting head, searches and automatically detects the position of the printed reference points, verifies the alignment between the cutting path and the printed image and corrects any deformation or distortion.
The result is free and quick media placement, working area maximization when working on smaller media, no distortion, automatic centring and multi-order and multi-material management.

Video Projection System
The Video Projection System projects a virtual die onto the material, which represents the image of the finishing path. It allows free positioning, rotation and manual or automatic nesting - always showing the material to be processed and providing the opportunity to optimize the yield and simply recover materials already used. Bearing in mind that the cost of materials is increasing all the time, greater savings lead to improved profitability.
The outcome is quick and easy sampling, dramatic waste reduction, reuse of scraps and maximum material yield.

Packaging Solutions

Kombo EL
The Kombo EL is Elitron's cutting system that provides a solution for the new need for samples and small batches in the cardboard industry. The Kombo EL will operate easily with up to 5mm thick Forex, cardboard, corrugated, polypropylene and materials up to 20mm thick. Like any other Elitron cutting solution, the Kombo EL features a smart vacuum system segmented into 6 dynamically activated suction areas. Managed by software, the vacuum power is focused only where the cutting head is operating, which produces premium finishing quality even on small sized pieces and details. The Kombo EL's robust structure is based on single block cellular steel, resulting in higher resistance, ongoing planarity and improved absorption of vibrations that may affect the overall finishing quality.

Kombo TAV
The Kombo TAV is the fully automated cutting solution, which meets the two main requirements of the cardboard industry, i.e. non-stop production and easy adjustment to quick turnaround jobs. Offering maximum flexibility 24/7 and high performance, the Kombo TAV guarantees complete automation of the production process thus reducing operator and material costs and facilitating a non-stop workflow.
The Kombo TAV is equipped with a Seeker System that operates as a dual camera, which reads the reference marks from the underside because packaging materials are loaded upside down as they need to be creased on the non printed side. The first camera is fixed and reads the first mark, whilst the second one moves across diagonally looking for the other reference.
When loading and unloading a powerful vacuum panel, the Airo Panel patented by Elitron, uses suction power to remove a cut sheet (or sheets), move it to the unloading area and stack it neatly on a pallet. Attachment nicks are no longer necessary, resulting in a higher quality, fully cut product from which waste material can be stripped extremely quickly and easily. It also means there are no attachment points and the system facilitates a high quality clean cut, perfect stacking, no stripping and one-stop unloading.

Kombo TAV-R
The Kombo TAV-R is a state-of-the-art automated finishing system for packaging and corrugated, incorporating an innovative digital cutting system and integrated logistics management system that can be tailored to suit a company's production layout. The Kombo TAV-R makes true 24/7 unattended productivity a reality for both industrial standardized workloads and multiple short production runs involving highly customized orders. It is a flexible, modular and innovative die-less cutting system. The integration of material handling into a now fully automated production cycle increases production and reduces costs. •

Research and Innovation
Cutting is not a stand-alone activity, but a phase in a more complex and engineered production cycle. That's why Elitron set up a research division focused on the development of full production automation technologies. Like Heleva, a smart loading solution for digital printers which makes the feeding process even more productive and operator-free.

Kombo TAV-R, state-of-the-art automated finishing system for packaging and corrugated.