

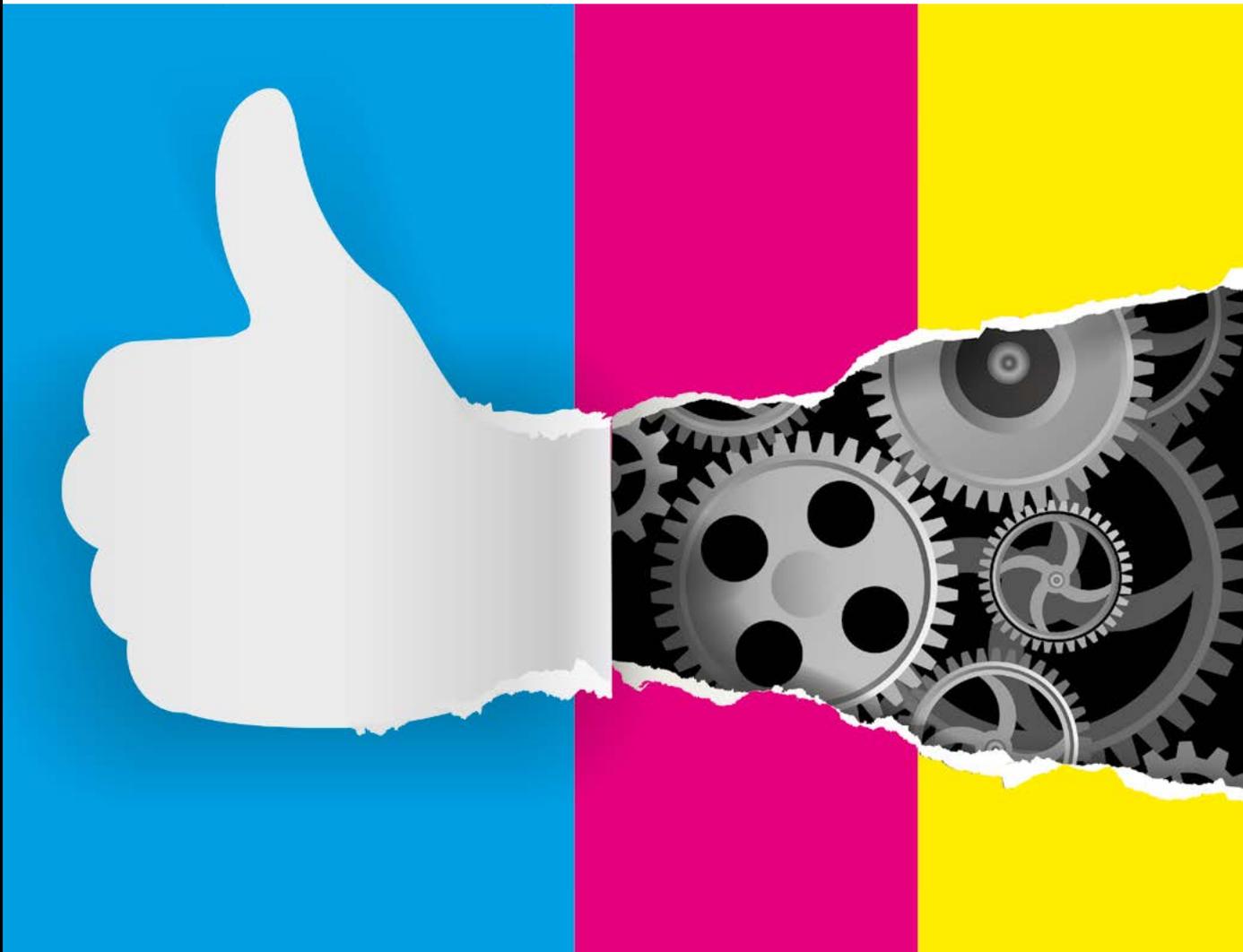
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# COMBINED SOLUTIONS FOR THE PROCESSING OF NON-METALS

Thorsten Brandt describes the benefits of high-end laser cutting

A modern laser system for cutting and engraving opens up completely new possibilities in the processing of a wide range of materials. So, for example, not only textiles, plastics, wood and composite materials, but also stone and paper can be processed. For more than 20 years, laser-system manufacturer eurolaser GmbH, based in Germany, has specialised in the design and construction of processing machines using CO<sub>2</sub> laser beam sources for areas of up to 3,210 x 3,200mm, discovering new areas of application every single day.

## LASER BEAMS AS A PROCESSING TOOL

The CO<sub>2</sub> laser beam, a laser which emits a beam in the infra-red range, is focused onto the material to be processed from above, and hits the surface at a point measuring 2/100mm<sup>2</sup> with a power output of between 100 and 600 watts. Thanks to this high concentration of energy, most materials simply sublime within fractions of a second. Adding a process gas, usually simply pressurised air at 2 to 3 bar, accelerates the cutting process and ensures clean cutting edges. There are no fringes, shavings, flakes or threads left behind on the processed part. In general, further processing of the laser-cut part can be undertaken immediately with no re-working or finishing necessary.

Furthermore, as a tool a laser beam is not subject to wear and tear, which is reflected in the relatively low down-time for the machine, and thus facilitates cost-effective production. The material itself is not subjected to any forces as it does not need to be clamped or



*It is possible to use up to two mechanical tools, such as router or different knives, parallel to the laser*

otherwise fixed during processing. Cutting and engraving are also carried out without any forces being exerted.

## WIDE RANGE OF TOOLS FOR INDIVIDUAL WORKING PROCESSES

The modular design of the laser systems from eurolaser, which are made in Germany, now makes it possible for the operator to utilise up to two mechanical tools parallel to the laser. Customers can unconditionally avail themselves of the entire high quality tool range produced by Zünd Systemtechnik AG of Switzerland. In addition to milling tools,

countless knives and scoring, marking and stamping tools are available. This provides the ideal opportunity to combine the advantages of most different processing methods according to the customer's requirements, all on just one machine.

A major benefit is the significant space saving in production halls, as well as a saving in high investment costs. And another aspect should not be overlooked – the machine operator does not have to deal with different processing systems and their software. Everything works through the same user interface. Customer requests from a wide variety of markets can be fulfilled easily and flexibly, thanks to the modularity of the eurolaser systems.

## LASER CUTTING, LABELLING, PRINTING IN A SINGLE PASS

eurolaser is expanding its product range with the addition of two new modules. Operators now have the opportunity to place adhesive labels on laser-cut parts and then print the labels individually afterwards. It is also possible to print directly on the material used. The new options are an optimal addition enabling labelling of the cut parts for additional process steps during production, thereby optimising traceability.

The new label module is a labelling system. It can be installed on laser systems as an option, and equipped with printed or plain

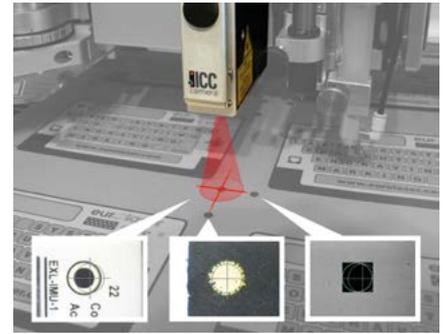
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*The XL-3200 from Eurolaser for cutting and engraving*



The work pieces are processed without contact and pressure using the bundled laser beam



The automatic camera recognition system simplifies precision contour cutting

manufacturers: Caldera, ColorGATE, EFI, ErgoSoft, GMG ProductionSuite, Onyx, Wasatch, Prepare-it, ZCC and i-Cut. This enables users to continue working in a familiar manner with no need for acclimatisation. The usual processes, including the pre-print stage, remain the same. This saves the operator time and avoids costly mistakes.

### PROCESS AUTOMATION IN PRODUCTION

In order to choose the right system automation, the laser system manufacturer always takes account of the operator's requirements. During a personalised consultation not only does the range of materials to be processed need to be considered, but the whole processing environment must be taken into account. For example, with our tried and tested conveyor system for transporting materials to and from the workstation, eurolaser offers a good solution for the continuous processing of flexible materials. Our shuttle table system, which was developed in-house, is perfect for the processing of thinner materials, such as foils, acrylic or wooden sheets. The material carriers can be exchanged within a matter of seconds so that the laser process can continue without any down time. The materials which have already been processed can be removed in an ergonomically economical way, using the material carrier which has been replaced and the table restocked simultaneously. This enables you to achieve increases in efficiency of up to 75%.

At drupa 2016, eurolaser presented its large-format, multi-functional XL-3200 cutting system with a processing surface of approximately 2,200 x 3,200mm. The company demonstrated the processing of a range of materials using its three-in-one tool concept. ■

**Thorsten Brandt is Operations Manager at eurolaser**

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labels, as required. Different adhesive properties and label sizes provide a broad range of applications for this module. Parts can now be labelled for further processing.

The ink printer module is a print-head that is installed directly next to the laser head. It enables precise printing with a resolution of up to 600dpi. In addition to label printing, it is also possible to print directly on various materials, even on non-absorbent surfaces. This option allows the high-contrast application of sewing markings, serial numbers or other data.

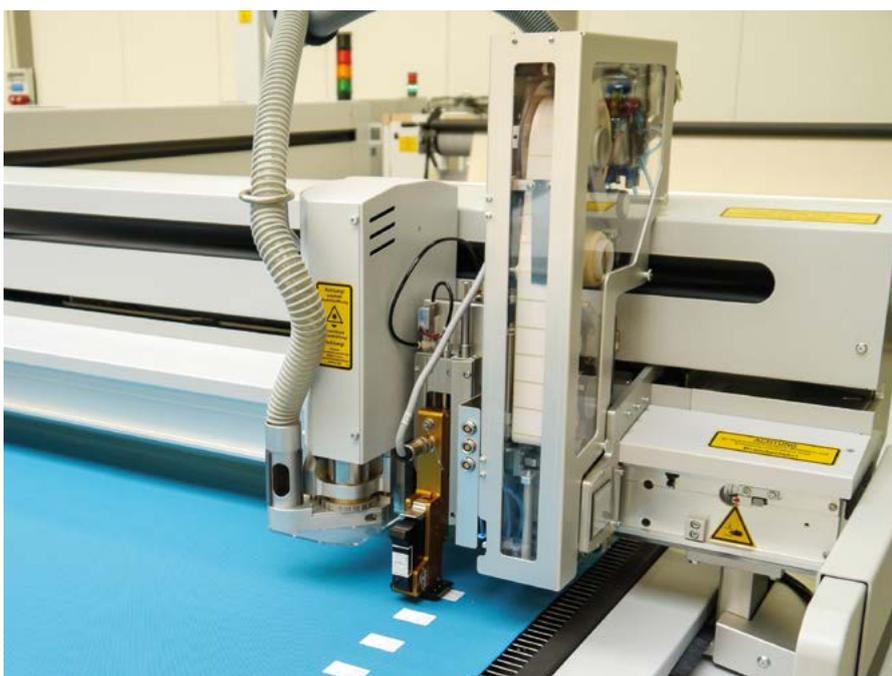
### PRINT AND CUT

For some years now, laser systems have successfully been fitted with automatic camera recognition systems. These enable printed fiducial marks, edges or other high-contrast contours to be scanned optically. This means that the position of the workpiece can be identified precisely and taken into account

in the further processing. Intelligent evaluation of the position markers also makes it possible to compensate for the dimensions as desired or required by the operator. This is useful in optimisation or in adjusting for the required dimensional tolerance. This addition makes absolute sense, and not just for quality assurance.

One of the big challenges faced by the print and cut market is workflow. It is essential that new finishing machines can be integrated seamlessly into the existing workflow. This means that the software used must include open and automated interfaces to all standard design, illustration, CAD and RIP programmes. With eurolaser's LaserScout software solution, operators can integrate the existing workflow from their i-Cut or Zünd Cut Center seamlessly and continue automated working.

LaserScout includes automatic print and cut data import for the following RIP software



With the new label and ink printer module, users can place individual labels onto cut pieces for subsequent printing