

Trotec ebook

The added value
of laser finishing in
signage markets



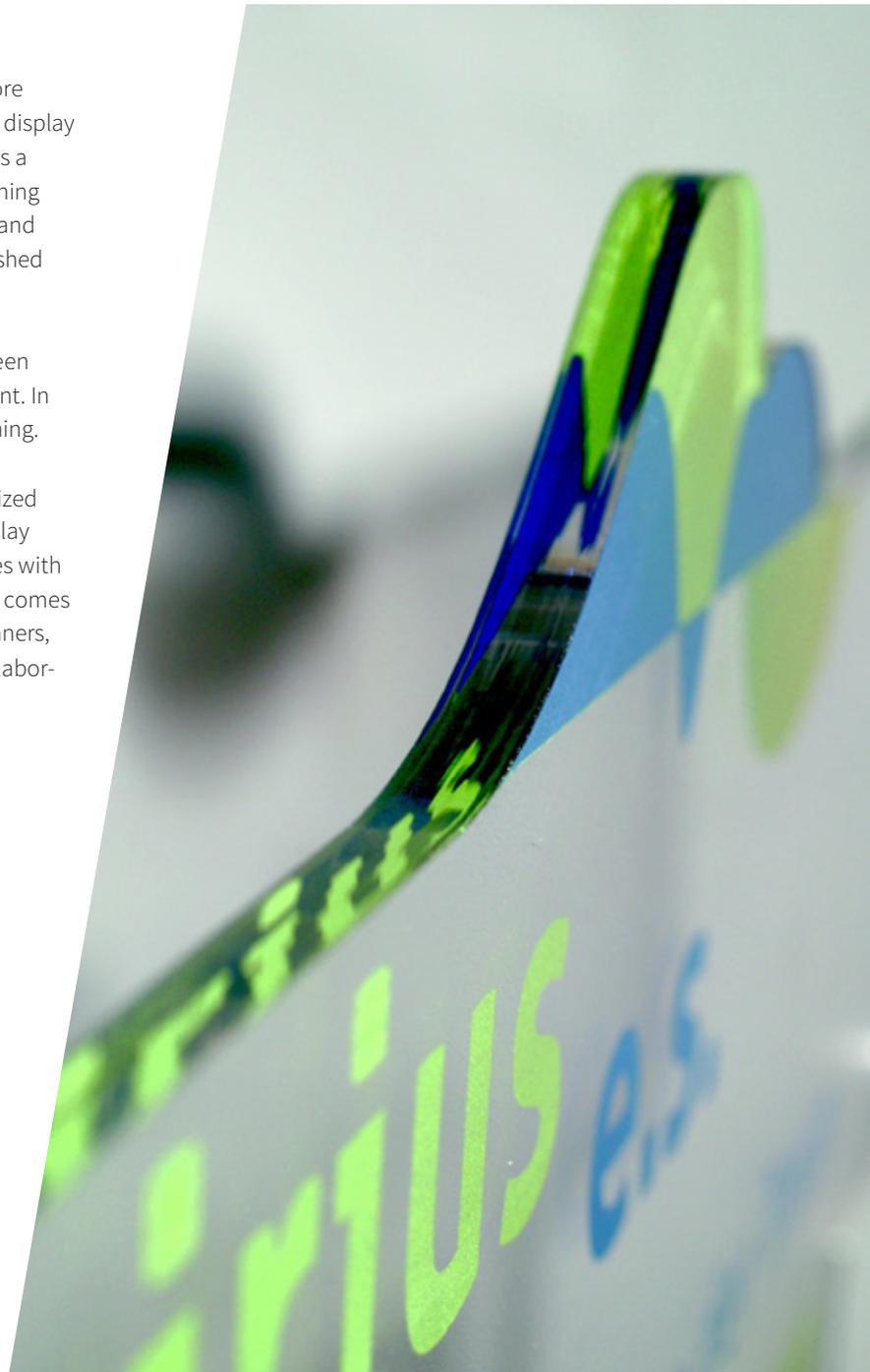
For sign shops, signage & display companies, and acrylic fabricators and shop fitters alike, the laser cutter serves as a productive, clean, reliable, and universal solution for all geometries and material thicknesses. Unlike routers, lasers can achieve flame-polished edges when cutting acrylic in a single step, without any additional post-processing. In addition, the laser cutter uses wear-free, contactless processing to achieve reproducible results. This allows for increased production and profits while also increasing the perceived value of the end products.

Unusual shapes for signs or displays make end products more interesting and unique. Print service providers and sign and display companies, who offer contour cutting of printed materials as a service, are able to expand their business. The creative finishing gives a competitive advantage and leads to higher margins and additional sales. A printed acrylic sheet only becomes a polished and sellable product with proper finishing.

Conventional cutting systems and milling machines have been established for a long time in the manufacturing environment. In recent years, more and more laser devices are used for finishing.

With the universal “tool,” highly detailed designs can be realized and printed materials can be cut precisely. Signage and display manufacturers using laser cutters stand out from the masses with creative display ideas or new branding approaches. When it comes to producing soft signage applications such as flags and banners, the laser cut creates a sealed edge of the fabric, eliminating labor-intensive manual seaming.

More
products –
more value



The laser cut is unbeatable on acrylic, as no material post-processing is necessary. To achieve brilliant edges with conventional milling technology, they must be polished with a machine or manually in a second processing step. The laser achieves a crystal clear finishing in half the time in only one processing step. Even the most intricate contours show perfect finishing, which is hardly possible with conventional polishing techniques.

Laser finishing enables higher productivity and thus more profit. Shapes and tolerances of all kinds can be easily produced with a wide range of materials including PMMA, wood, paper, cardboard, MDF, polystyrene, textiles, and foam.

With laser technology, there are no costs for new tools, as the laser beam is not worn out by the material processing. Furthermore, the material does not have to be fixed. Highly filigree cuts with an accuracy in the range of tenth of millimeters are implemented without problems.

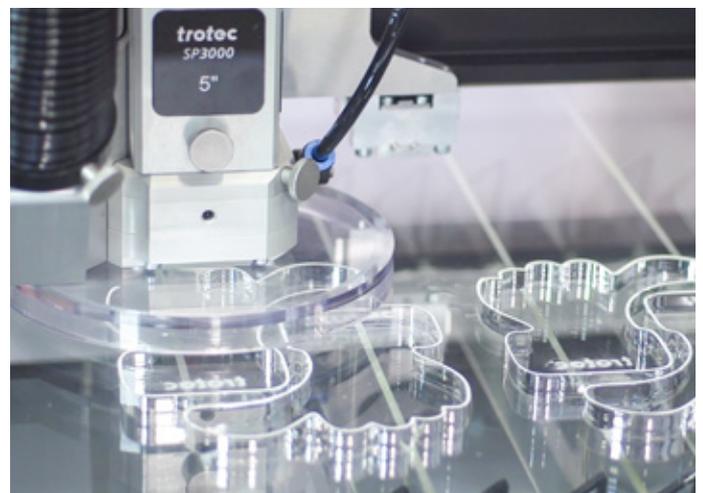
Trotec lasers support a simple and powerful print & cut workflow. An easy-to-use interface to prepress or RIP systems allows full integration into a digital workflow from order to finished product. Printed letters, displays, or signs can be cut individually thanks to laser technology and an optical recognition system. With other methods, small deviations in print lead to unsatisfactory results. A camera system recognizes all distortions in print, regardless of whether they are linear, non-linear distortions, or rotation and offset – the cutting path is adapted automatically and dynamically. The cutting lines always fit perfectly to the printed material.



More products – more value

Everything is possible from simple rectangular signs to complex contours, displays and illuminated signs:

- UV-printed, contour-cut signs made of high-quality acrylic
- Printed advertising materials of acrylic, illuminated letters and logos
- Contour cut of illuminated acrylic signs
- Acrylic letters, with and without backlight
- Large-format engraving and marking of acrylic plates for LED panels and backlit applications
- Printed displays in exceptional shapes
- Printed and cut card displays
- Flags, appliquées, and banners



Product Examples



Acrylic display with an unusual shape



Illuminated sign made of printed acrylic



Printed acrylic letters



Acrylic letters



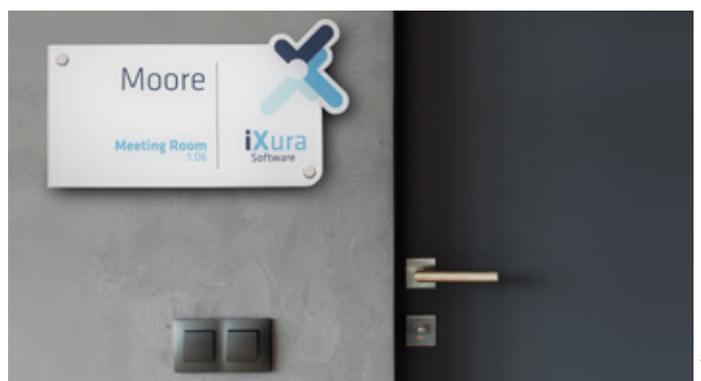
Soft signage banner



Illuminated letters



Company Sign: Print & Cut



Door Sign: Print & Cut

Ultimate productivity

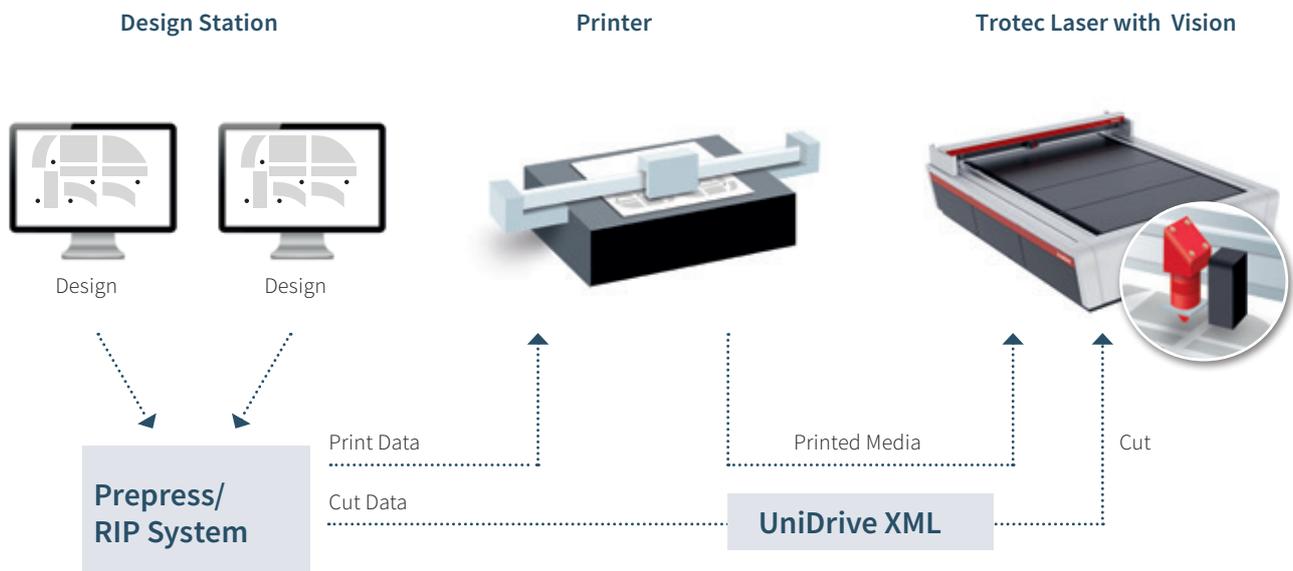
More power means higher cutting speeds, which ultimately makes the signage and display manufacturer more productive. Trotec's SP Series large-format laser cutters are highly efficient flatbed laser plotters and ideal for demanding cutting applications in plastics, wood, textiles, and more. Trotec CO₂ laser cutters are designed for fast and precise processing of large-format materials with easy integration into the shop floor. The fast cutting speeds, four-side access, and Tandem Assist ensure maximum productivity, allowing operators to use the entire work area with no downtime, all while the laser safety class 2 system creates an optimal and safe environment. In addition, the multi-functional table concept allows for the use of different cutting tables to meet the wide range of requirements when processing materials of varying sizes and thicknesses.

Unlike machine-only solutions, the Trotec SP laser systems offer a safe and productive solution including hard- and software, a suitable exhaust system, and system support throughout the entire life cycle from a single partner.

Workflow solutions for print & cut applications

As an add-on, a camera system is recommended when finishing printed materials. Trotec laser systems can be equipped with the Vision laser software– thus, the perfect contour cut of printed materials can be achieved quickly, reliably, and easily for operators.

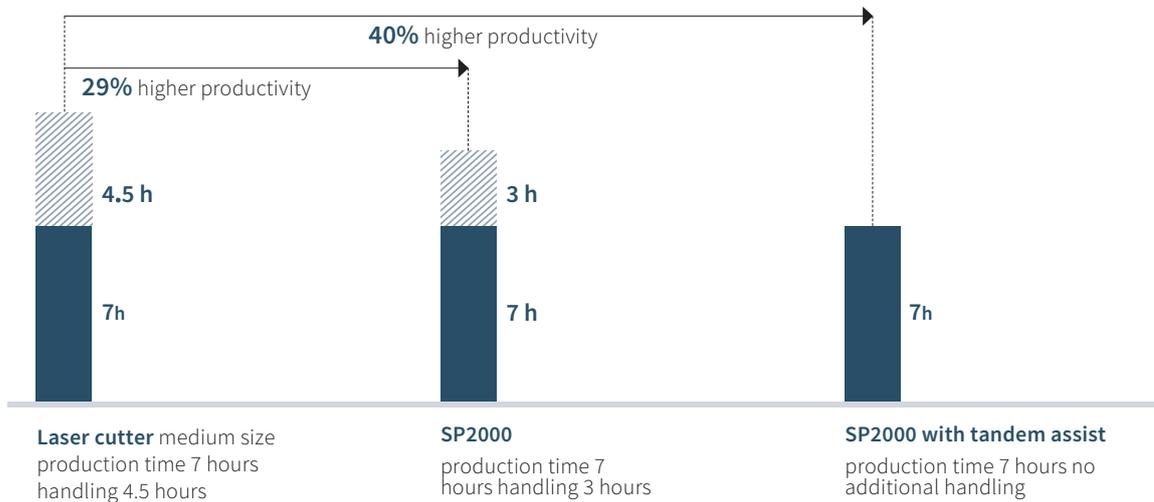
Multiple jobs are consolidated by a prepress or RIP System to optimize material usage and print quality. It generates a print file for digital printing of the designs as well as a corresponding cut file for laser cutting. The cut file meets the printed material at the laser cutter, which aligns the cut contours to the printed patterns on the material and cuts out the printed parts using vision-based registration.



Maximum productivity in numbers

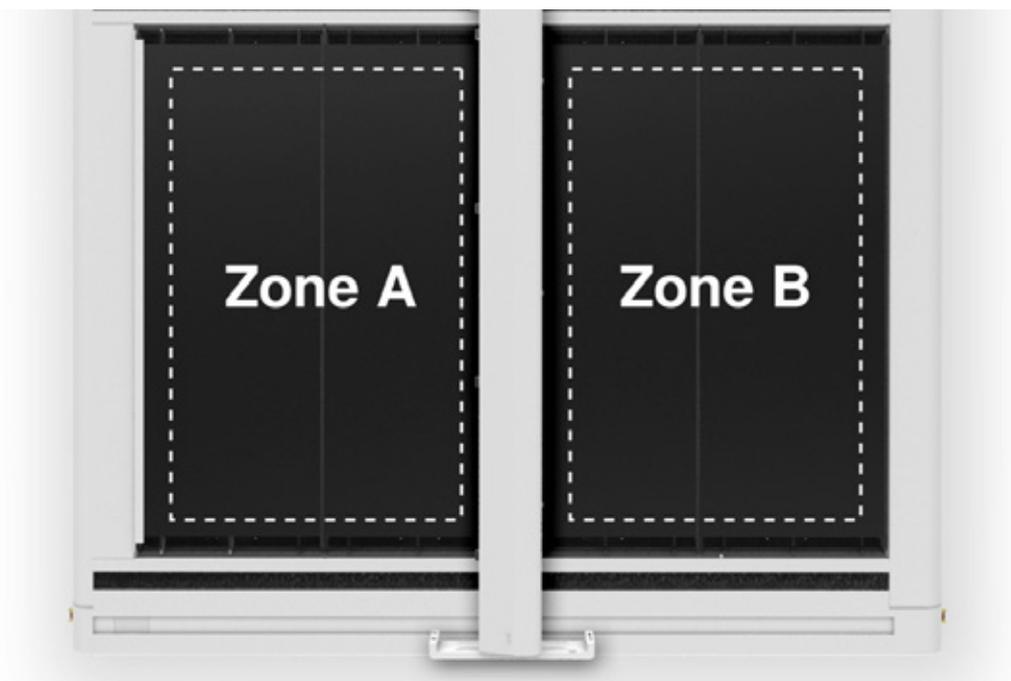
Example: Laser cut temporary cardboard displays
 Key figures: temporary display, 0.25 in. cardboard, quantity 500

Increased productivity up to 40%
 by using the SP 2000 with tandem assist



Comparing the production time of 500 temporary signs when using a midsize flatbed laser (work area 40 x 28 in.) and Trotec's SP2000 (work area 66 x 99 in.) shows a time saving of 10%. The real productivity advantage can be achieved when working with the Tandem Assist.

With Tandem Assist, the work area can be virtually split into two zones. While the laser cutter in Zone A is processing the material, the finished parts can be removed in Zone B and the work area can be reloaded. This minimizes idle times and significantly increases productivity.



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