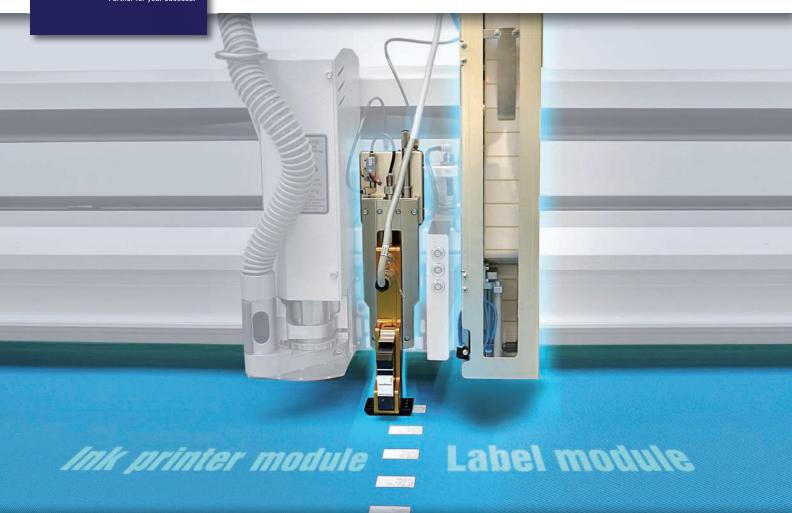


LASERPOINT

The Laser Magazine by eurolaser

18th edition / February 2016



Gespänsterwald GmbH Verpackungen

Seeing individual products as a challenge

360° Extraction Technology

Perfect cut edges free of smoke deposits

Pick'n Place – Robot systems for supplying

Economical and flexibly automated



The automation of your production – The engine for the future

Dear customers and business partners, dear interested parties,

We are always engaged to optimise your productivity. The Shuttle Table System, the Conveyor System or our Remote Operation are just some examples. eurolaser has been always known for elaborated technology and sophisticated concepts.

With the new assembly robot 'Pick'n Place', we pursue this course further. This automation process ensures a significant increase in productivity, as the robot takes over the time-consuming assembly process of the laser system so that the machine operator can spend his time on other tasks in the meantime. This saves not only time but also money.

But that is not all!

This year, we have also developed a Label and an Ink Printer module which incredibly easy allow labelling and marking onto different materials. Thus, even the tracking of additional process steps during production process would be simplified.



These and many other exciting topics are waiting for you. Enjoy reading,

Matthias Kluczinski

Three machining processes in a single operation

LASER CUTTING - LABELLING - PRINTING

We expand our product range with the addition of two new modules. Now, you 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 a well thought out addition to label the cut parts for additional process steps during production, thereby optimising traceability.





Label module quick and flexible labelling



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

an ideal scenario, this optimises the production process and reduces the error rate. Logo labels or bar codes can be applied to sales items directly on the processing table. For individual labelling with different contents, this module can be easily combined with the ink printer.

- Printed and blank labels can be used
- Standard labels from the roll (76 mm roll core diameter)
- Usable with different adhesion properties (easily detachable to permanently stuck)
- Use of labels in variable sizes (max. Carrier paper width: 46 mm)
- Different materials can be stuck onto





Ink printer module – print head for precise inscription



The ink printer module is a print head that is installed directly next to the laser head. It allows precise printing with a resolution of up to 600 dpi. 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 se-

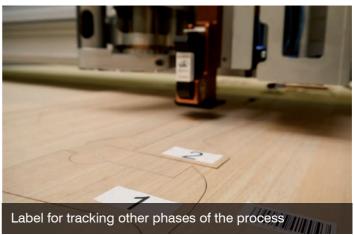
and barcodes

wing marks, serial numbers or other data. Depending on requirements, there are special inks for different surfaces, which are quick-drying and have excellent wipe and abrasion resistance. The ink printer module is even compatible with commercially available ink cartridges.

- Contactless printing and marking
- Choice of inks for different surfaces
- Different colour cartridges usable (not combined)
- Ultra-fast drying
- Compatible with low-cost standard colour cartridges (e.g. HP)
- Less ink consumption
- Very high wipe and wear resistance
- High resolution printed images with up to 600 dpi, even at fast speeds
- Contrast-rich printing, optimised for camera control systems
- Markings in all directions for other production processes
- Minimal cleaning required print head does not come into contact with the colour

The two new modules are available for the following laser systems and can be combined with other options:

L-3200, XL-1600, XL-3200, 2XL-3200, 3XL-3200.







Fine product markings (e.g. serial numbers, date and barcodes)

Typical usage options for print head and labelling system:

- Marking of different cuts for tracking other process stages in production (laser + label module + ink printer module)
- Sewing markings for further processing (laser + ink printer module)
- Branding of products using brand marking (laser + label module with preprinted labels)
- Marking with serial numbers, dates or times (laser + ink printer module)
- Automation of further processing using barcodes (laser + label module + ink printer module)







The ,Laser Workshop'

RESTORATION OF WOODEN ELEMENTS



Anybody specialised in renovation work knows just how much effort goes into the cost-intensive restoration of historical elements of facades and fences. The replacement of weathered wooden components is carried out for the most part meticulously by

hand. However the 'Laser Workshop', a woodworking specialist, has embarked on a new path. It produces customised wooden parts such as fences, balcony cladding and small gifts individually according to customer specifications.

Laser processing of wood with 20 mm thickness

In order to take one rather extreme example, a complete garden fence was produced from 20 mm larch wood panels. A design software was used to format the panels using sketches that had been provided. Once the wooden panels had been placed on the laser processing table, machining was carried out without any material contact and soundlessly, as if by magic. For the production the laser cutting system from eurolaser was used. Thanks to this modern manufacturing process the 'Laser Workshop' is able to work both more efficiently and more economically. This results in a significant time advantage compared to traditional manufacturing methods. The use of laser is the ideal choice even where ornate wooden parts that have rotted have to be replaced 1:1. Thanks to its state-of-the-art laser system the 'Laser Workshop' was able to simplify its production process, which of course benefits its customers because this means that it can offer its products at more attractive prices in many cases.

Benefits of eurolaser technology for wood processing:

Natural woods, plywood and MDF can be cut efficiently and engraved at the same time with the innovative laser system from eurolaser. Even the most filigree contour outlines and recesses with diameters of less than 0.1 mm are child's play for the laser. Such a machining application would be inconceivable with a milling machine. This type of forceless machining does not require any clamping of the basic material, so the wooden surface is not damaged. There is no chip formation with laser processing - a benefit that de-



Model of wood produced with laser

serves highlighting because this means there is absolutely no need for any post processing and it renders cleaning around the machine a thing of the past. fence elements in just one hour. This would have taken much, much longer had it been carried out by hand.

Automation due to Remote Operation

In order to attain the maximum level of automation in its machining process the ,Laser Workshop' uses an optional automation technology that has stood the test of time - Remote Operation. What does Remote Operation mean? This option helps the user to drastically minimise processing time on the laser table. The cutting system is designed for alternating operation, i.e. the cutting table is divided into two machining areas. While the laser is still cutting on the one side, the operator can safely remove the finished parts on the other side. Once the cutting process is finished, the sides are simply changed and production goes on uninterrupted. This process reduces idle times to a minimum so that the system can be operated at virtually full capacity.

Equipped in this way, the ,Laser Workshop' was able to manufacture more than 20 elaborate

Professor Ernst W. Nowak, managing director of Laser workshop:

,Our worldwide research via the Internet brought us a lot of valuable information about the laser systems available on the market (...), but only eurolaser was able to meet our requirements to the full and in an outstanding quality.

Laser technology is gaining acceptance in an ever increasing number of areas and will play a decisive role in many manufacturing processes in future as well. It's good to be ready and well-equipped for tasks to come. The ,Laser Workshop' has recognised this trend and is now in a position to answer the challenge of the competition, both today and in the future.





Professor OStR. Dipl. Ing. Ernst W. NOWAK Am Römerweg 1 A-3231 St. Margarethen www.nowe.at

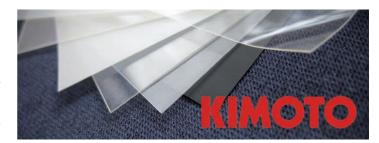


laser tested **KIMOTO PET-FILMS**

EUROLASER IS TESTING NEW MATERIALS

Industrial solutions for display screen protection, light diffusion, film keypads

KIMOTO is a world leader in the manufacture of coated plastic films for technical applications. Its products are used in the electronics, printing, machine and lighting industries. We tested various brand films for cutting capability on our laser systems on behalf of KIMOTO.



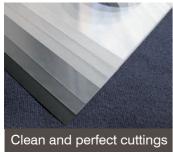
The following films underwent laser testing:

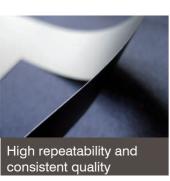
- ElastoDur Gloss Clear ED-G-175960
- ElastoDur Matte Textured ED-AG70-175069
- Prosave Antibacterial Mat 125 SQHM 960
- Prosave Antibacterial Clear 12 SQHC 1 960
- Prosave 50SQ02S
- 100 SXE Light up Film
- Carbonfeather 100X2B

What benefits does laser cutting offer for these Kimoto PET films?

- High level of precision and cut quality
- Contactless cut no material damage or fixation
- No tool wear consistent cut quality
- Film remnants do not stick to the tool
- Cutting of extremely filigree details possible
- No initial costs due to the construction of tools (e.g. die cutters)

All films tested are ideally suited for cutting with eurolaser systems.







Where are KIMOTO films used?

ElastoDur – flexible and resistant films for industrial applications:

Areas of application:

- Membrane keypads
- Fittings and dashboards
- Graphic overlays
- Display screens
- Name and product labels
- Touch panels
- Surface protection films for industrial applications



Prosave - Protection and carrier films for industrial processes:

Areas of application:

Screen protection



Lightup – Diffusion films for lighting and display systems:

Areas of application:

- Light distribution in lights and lamps
- LED systems and light boxes
- Edge lighting and LCD displays

CARBONFEATHER -

Light blocking films for optical equipment and lighting:

Areas of application:

- **Shutter blades**
- Lens assemblies
- Lamp fixtures
- LED systems
- Lens spacers

Tepex[®] Dynalite from Bond-Laminates

LASER CUTTING OF THE HIGH-PERFORMANCE COMPOSITE

Tepex® Dynalite is a highperformance composite from Bond-Laminates. Such composites are often called organic sheets. The material consists of multiple layers of continuous fibre reinforcements in a matrix of engineering thermoplastics. The continuous fiber structure, fully consolidated

with a thermoplastic polymer, provides the maximum possible strength and stiffness. The regularly arranged continuous glassfibers give it an attractive carbon-like appearance. Typical applications include industrial and automotive applications and sports goods.

We tested this high-strength material in our application laboratory. The results of the cutting tests indicate that this material can be cut with our CO₂ laser cutting systems. The stability of the material means that high laser powers are needed for cutting.





What are the benefits to cut Tepex® Dynalite with laser?

- Clean and perfect cuts no reworking necessary
- No material fixation necessary thanks to the vacuum table
- No tool wear so therefore consistently high cut quality
- High degree of flexibility in the choice of contours without any need for tool construction or changeover
- Combined processing with a milling cutter and CO₂ laser possible on one machine
- Unique choice of different table sizes suitable for all standard sheet sizes

Areas of application:

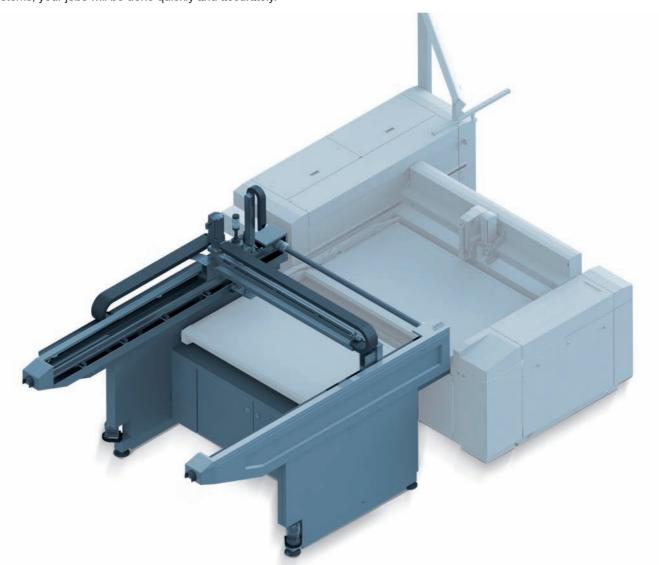
- Components in the automotive industry (organic sheets)
- Soles for sports shoes are made of Tepex®
- Solid organic sheets replace injection molding to some extent

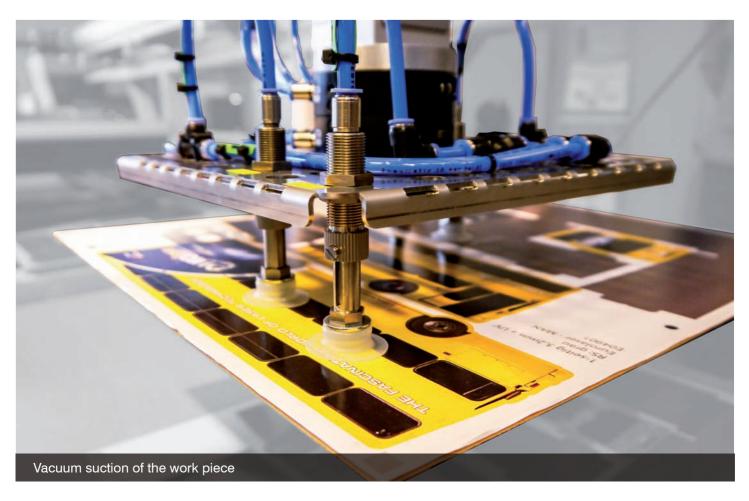


Pick'n Place – Robot systems for supplying

ECONOMICAL AND FLEXIBLY AUTOMATED

Optimise your production process by automating the supply of your laser system. With our flexibly configurable and scalable robot systems, your jobs will be done quickly and accurately.





Your advantages:

- Cost advantages through automatic loading and unloading
- Flexible adaptation to your application
- Variable size scaling
- Simple handling without special robotic skills through teach function
- High process reliability by minimising mistakes
- Flexible robot usage through simple self programming
- Saving time through optimised processes
- Wide material choice through numerous gripping and picking solutions

Fully automated process operation

In order to ensure the best possible advice, specialists for robotics are supporting us. Thus, we provide an optimal configuration and integration of the system into your production workflow.

The table already loaded with the new material will be released through a digital signal. Once the working process on the second table is completed, the change will start fully automatically. The new material is cut automatically while the robot will unload the finished work pieces, parallel to the cutting process and without downtimes.

We are glad to advise you in person in order to develop your optimal laser working process.

Individual and adequate configuration

We configure Pick`n Place especially for your requirements. Therefore, individual factors can optimal be considered and you are working with a best possible solution for your workflow. We consider among others:

- Material
- Size
- Weight
- Clock cycle
- Workflows
- Working environment and much more

Our solution for small jobs

If you are looking for a professional pick and place solution for small jobs, we have further versions within our product range.



Who nowadays wants to cope with competitive pressure, is focusing on innovative working preparation and production methods. However, in practice, the implementation is not always that simple. Without flexible technologies and automation processes, new innovations are barely economically possible. The laser technology makes many things possible - today and in the future.

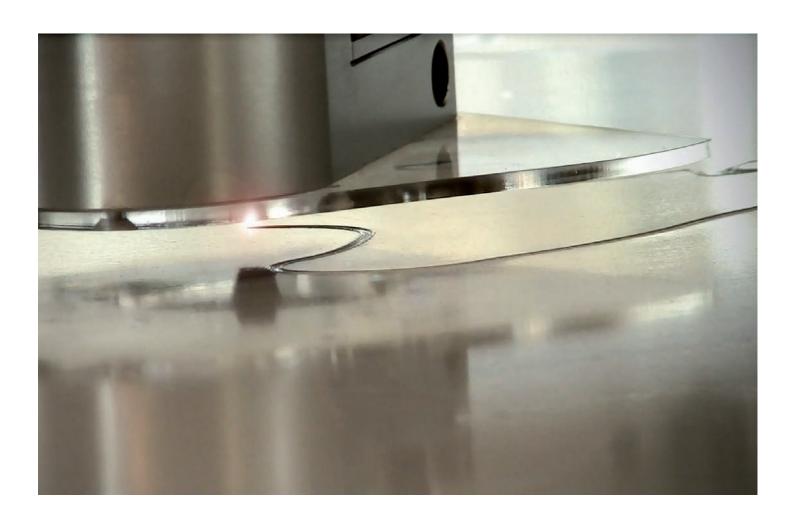


Large-scale laser cutting of acrylic

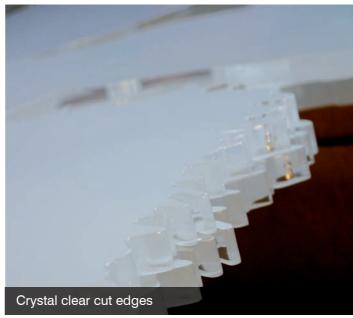
EUROLASER SUPPORTS THE LÜNEBURG MUSEUM

This project illustrates just how well art, culture and our high-tech laser systems go together. The Lüneburg Museum came up with a very special idea for decorating the exhibition rooms. Their request: individually designed life-size figures made of acrylic glass.

A welcome opportunity for eurolaser to combine it own core competence with a good cause. Supporting regional institutions has always been a concern close to the heart of eurolaser.







Cutting the large acrylic figures with laser

We used cast 15-mm thick acrylic glass for producing the figures. As some of the figures were to be over 2 m high, we used the XL-1600 or rather XL-3200 laser systems to cut them. The large processing areas of these cutters meant the figures could be cut in one piece from the acrylic sheets.

One important detail of the finished figures is their smooth edges – after all they are intended to present the exhibits to the visitors. So the high-quality gloss effect of the crystal clear cut edges of the acrylic is, of course, important for the museum. Acrylic glass, if processed in the customary way, requires several machining steps if a clear, transparent surface finish is to be achieved on the cut edge and there are considerable limitations where the cutting of filigree inner contours is concerned. In contrast, laser cutting uses an extremely focussed laser light which creates localised heat formation that immediately causes the acrylic to evaporate. Once cut the crystal-clear and smooth contours required appear naturally and require no further re-working. So in fact the whole procedure is achieved in just one single processing step.





Finishing and installation of the figures

A little colour was all that was missing to complete the figures. A local advertising agency was commissioned with applying foils to the acrylic glass. These printed foils give the figures a discrete coloured effect. Specially-designed steel supports ensure stable placement of the large and heavy acrylic characters. The result is quite impressive.

What are the benefits of using eurolaser systems to cut acrylic with laser?

- Smooth, crystal-clear cut edges in one operation
- No clamping or fixing of the acrylic sheets necessary
- Less breakage and waste because laser cutting is a contactless process
- No acrylic chippings less soiling and less cleaning required
- Practically radius free laser cutting of inner contours for virtually all acrylic glass thicknesses
- Processing with protective foil possible without any material damage
- Combined acrylic processing with a milling cutter and CO₂ laser possible on one machine
- Unique choice of different table sizes suitable for all standard acrylic sheet sizes
- Large-scale engravings (even relief) over the entire processing area







eurolaser – new facility in Poland now open

CONSULTATION AND TECHNICAL CUSTOMER SERVICE

he demand for high-tech CO₂ laser systems for largeformat cutting is growing worldwide. In particular countries with a large manufacturing industry are always on the look-out for new manufacturing technologies. In line with this trend we continue to extend our bases of competence in other European countries. Therefore we opened a new branch office in Poland in April 2015.

Mariusz Deptuch, Manager of eurolaser Poland: 'We are looking forward to being able to offer competent and personal consultation on the Polish market as of now in the local language. Proximity to the customer is a key factor, in particular where industrial products in need of

explanation are concerned. So the establishment of eurolaser Poland is an important step towards acquainting the manufacturing industry in Poland with the many benefits laser technology has to offer. Thanks to our competent team we are in a position to ensure both market-orientated and individual consultation before a purchase as well as a technical customer service after a purchase. Our on-the-spot location enables us to respond quickly. The customer also benefits from short distances and saves on travel expenses.

Poland eurolaser definitely expands the international presence.



eurolaser Donation Campaign 2015 LASER today

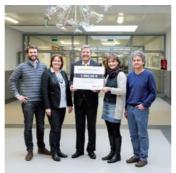
INTEGRATION THROUGH ,LEARNING BY DOING'

As a result of the current crisis in Syria there are more than 16 million people worldwide fleeing war and inhumane conditions. Many of these refugees find a new home in Germany. We need to give these people local support, to help them acclimatize to the new environment in which they now live. For this reason eurolaser has decided to lend its support to the initiative of the District of Lüneburg.

,Instead of sending Christmas cards and presents to our business partners, we would prefer to help the needy people again this year', explains

Matthias Kluczinski, CEO of eurolaser GmbH.

Children and adolescents in particular need to find a regular daily routine as quickly as pos-



sible. So they should be given the possibility to attend a school and language courses without delay. However, many young refugees also need targeted help with daily routines and tasks, such as repair and renovation work, for example, or with housekeeping and leisure time activities such as swimming. With exactly such minor and major daily challenges in mind

the District of Lüneburg has set

up a new program. Young refugees in Germany are to be helped find a regular daily routine under the motto ,learning by doing'. Learning the German language and help with basic mathematics are just as much part of the course as topics such as intercultural team building. Becoming acquainted with the working world and professional orientation are other goals of the program.

eurolaser wishes to help with the refugee situation and has decided to support the project with a donation of 1.000 Euro to help cover the material costs of the course. In this context we would like to thank all the voluntary helpers and other people involved, and of course you,

NEWSLETTER AVAILABLE AS OF NOW IN SEVEN LANGUAGES

As of now we are offering our Newsletter in seven languages. Information from the branch, material reports, theoretical and practical expertise plus application examples - up-to-date, informative and always ahead with the latest trends. Sign up and be inspired!



Laser today





Gespänsterwald GmbH Verpackungen

SEEING INDIVIDUAL PRODUCTS AS A CHALLENGE









Maintaining the status quo is easy - what makes the implementation of customer desires more tricky are small quantities, short delivery times and high quality standards. Gespänsterwald GmbH is able to meet these demands with no problems – and 100% in Germany.

The company from Rostock has specialised in the packaging and point-of-sale market as full-service provider. Here, customers can get everything from one source - starting with the brainstorming and pre-press up to the implementation including printing and finishing.

In addition to folding boxes, packaging, greeting cards, applications, labels and various gifts, the business field of the company from Rostock also includes digital and UV printing. However,

it is not only paper that is processed with pressing, stamping and heat transfers. Even wood and MDF products are included in the Gespänsterwald portfolio. Anything that cannot be realised technically is created



through the special cooperation with the sheltered workshops, which guarantees high-quality finish by hand of any kind.

Print & Cut -A great team

Individual customer wishes are realised at Gespänsterwald using the most recent technologies. For the area of large-format sheet printing, the company has a UV printer type Océ Arizona 318 GL. Together with the laser cutter L-1200 from eurolaser, this is a decidedly worthwhile combination, for instance, printed acrylic plates can be finished directly on the print contour in breathtaking quality.

The special feature of the laser cutter is the large sized shuttle table, with which the table that is already loaded with material can be changed over. While the laser continues cutting, the operator can prepare the next table in parallel. This not only facilitates handling, but also significantly increases efficiency!

,With the laser system we enable precision work of flexible and rigid materials within the shortest time span'

(Gespänsterwald)

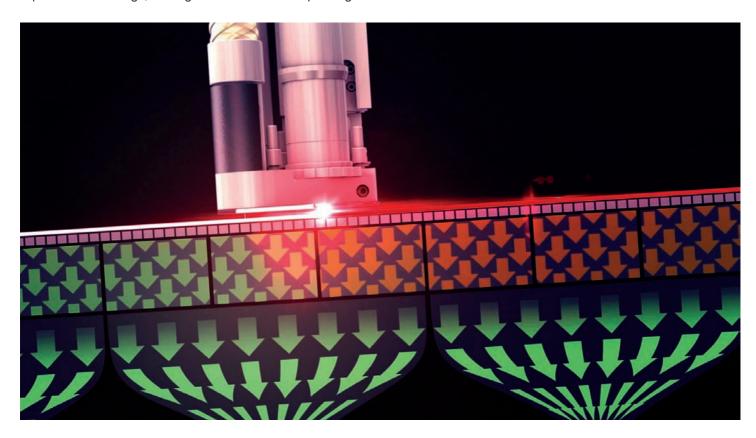
Gespänsterwald GmbH Verpackungen Werftstraße 35 18057 Rostock Telefon: 0381.865113 91 info@gespänsterwald.de www.gespänsterwald.de

360° Extraction Technology

PERFECT CUT EDGES FREE OF SMOKE DEPOSITS

n many fields, laser cutting can boast perfect cut edges. Typical arguments in choosing a suitable laser system are the efficiency of the laser beam source or the precision and speed of the motion system. Extraction technology only rarely plays a role in the purchase decision. This is a mistake! Extraction has a significant impact on the cut edge, although the extent varies depending on

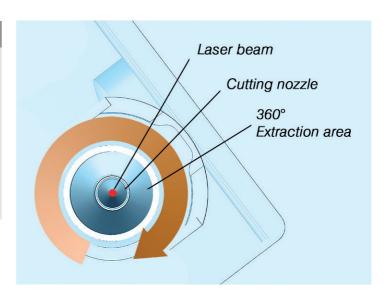
the material. Using our 360° extraction and material vacuum systems, we can provide the ideal solution for always achieving maximum cut quality and you work safely and efficiently. We extract smoke gas emissions from the place where they arise – directly above and below the cutting gap.



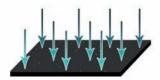
Benefits of the eurolaser extraction systems:

- Always maximum cut quality everywhere on the table
- Individual table concepts for different materials, can also be combined
- Faster, securer extraction while cutting acrylics due to small openings in our raster plate
- Upward and downward extraction can be controlled separately
- Even suction pressure everywhere on the table
- Best ambient air in the vicinity of production

All eurolaser laser cutting systems are equipped with well-conceived 360° extraction systems.

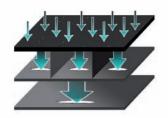


How is the high cutting quality ensured over the entire work area?



An even, full-surface distribution of the exhaust performance over the entire work area is achieved for example by means of up to 6,400 exhaust points or a full-surface honeycomb structure with a thin web over the entire surface of the table. As exhaustion has a decisive impact on the cut edge, we guarantee you a consistently high cut quality everywhere on the table.

How do we achieve this powerful exhaust performance?



Once the cutting emissions have been evacuated underneath the material, they are concentrated at individual exhaust segments. This creates a strong vacuum that is the basis of the exhaust performance. Subsequent concentration at a few outlets enhances this effect even further. You get optimum extraction directly at the cutting gap.

Why is the extraction concept from eurolaser better than extraction exhaust systems?

With our extraction concept, you get optimum performance exactly where it is needed – directly at the cutting gap. The individual segments concentrate the suction performance on a relatively small area. This minimises the loss of power due

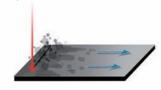
to air leak, so the power output remains consistent. In other extraction concepts, extraction of the entire work area is often effected via one large V-shaped substructure with one turbine outlet. So, the exhaust capacity is distributed and therefore, not consistently strong everywhere.



In the case of long cutting gaps, this setup has a lot of air leak that over time reduces the actual exhaust performance at the cutting gap. The result is uneven cut edges and a heightened build-up of smoke deposits. As a rule, several small exhaust turbines are used at eurolaser, which always supply the individual areas of the table with the full performance capacity.

What is the advantage compared to lateral extraction?

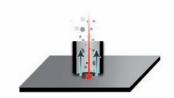
In the case of closed table systems, ambient air is often evacuated via lateral exhaust slots that are normally located at the rear.



This air flow then draws the smoke particles and soiling right across the entire material. eurolaser prevents this undesired side effect by using an additional upper exhaust unit.

Why do we use an additional upper extraction unit?

The upper extraction unit ensures extraction of the cutting emissions that arise. This system is of particular importance for operations in which the function of the lower extraction unit is restricted.



Typical examples here include engravings or kiss cuts, where the material is not completely cut through. In this case, the emissions that arise above the material cannot be extracted from below through a cutting gap. The upper exhaust unit sucks the air around the laser beam directly upwards, evenly and in a circular movement.

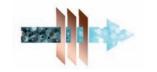
What impact does the incoming compressed air have on the cut quality?



The targeted air flow forces the material melts out of the cutting gap and cools the heat-affected zone. The stream of compressed air is vacuumed off downwards through the cutting gap. In addition, the overpressure protects the optical lens against soiling. The compressed air has a significant impact on the laser cutting.

Is it possible to filter the emissions?

We offer different filter concepts for filtering coarse, fine and gaseous substances depending on your requirements. Our range even includes industrial solutions that are also suitable for plants with ecological certification.





See the extraction technology in action

Link:

http://www.eurolaser.com/products/system-components/extraction-technology/



eurolaser - Personalities

New recruitments

Name	Profession	Start of employment
Susanne Altenburg	Service Back-Office	20.10.2014
Luigia d'Aiello	Service Manager	03.11.2014
Torben Christopher Grimm	Service Technican	01.03.2015
Jürgen Buck	Sales Back-Office	01.04.2015
René Constien	Technical Purchase Employee	01.05.2015
Arne Köster	IT-Operator	01.06.2015
Jan Schmidt	Electrical Engineer	01.07.2015
Valentin Nickelwardt	Service-Technician	20.07.2015
Andreas Eppen	Application Engineer	15.10.2015
Vitaly Eponeshnikov	Online Marketing	01.11.2015
Bernhard Hentschel	Project Coordinator	01.11.2015
Thomas Meyer	Product Manager	01.01.2016
Bernard van den Berg	Area Sales Manager	01.01.2016

Anniversaries

Time in company	Start of employment
10 Years (06.12.2014)	06.12.2004
5 Years (08.03.2015)	08.03.2010
15 Years (01.07.2015)	01.07.2000
5 Years (01.08.2015)	01.08.2010 Mursal Avci
5 Years (01.08.2015)	01.08.2010
5 Years (01.08.2015)	01.08.2010
5 Years (01.11.2015)	01.11.2010
10 Years (01.12.2015)	01.12.2005
	10 Years (06.12.2014) 5 Years (08.03.2015) 15 Years (01.07.2015) 5 Years (01.08.2015) 5 Years (01.08.2015) 5 Years (01.08.2015) 5 Years (01.11.2015)





New trainees

Name	Training course	Start of employment
Tobias Lahme	Specialist for warehouse logistics	15.08.2015
Michel Reichmann	Mechatronics	15.08.2015
G. Gnanachandra	Mechatronics	15.08.2015
Timo Haustein	Mechatronics	15.08.2015
Sina Walter	Industrial clerk	08.09.2015

Examinations passed

Name	Profession	Date
Florian Buchholz	Dual course of studies / Industrial clerk	01.01.2015
Eder Quiroz	Mechatronics	01.01.2015
Irina Pancuk	Dual course of studies / Industrial clerk	01.08.2015
Alana Jaqueline Wenzel	Dual course of studies / Industrial clerk	01.08.2015

DATES





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