PRESS RELEASE for the LASYS 2008

Hall 4, Booth D55

WE THINK LASER

Hamburg/Munich, March 2008: The new international trade fair LASYS 2008, which is dedicated to the variety of laser system technology, has its premiere in Stuttgart. The ROFIN group as a supplier of laser beam sources, components and complete systems present a wide range of system solutions for industrial laser materials processing. With systems for welding, structuring, marking and surface treatment all business areas are covered.

THE POWER OF LIGHT

Extremely Dynamic Laser Systems for More Flexibility

Picture 1: ROFIN RWSflex

The ROFIN Macro group sets with its **RWSflex** new benchmarks in remote welding. Because of its new robot control from ABB and a more flexible programming, the high speed welding system provides new possibilities for creating laser stitched seams. With the remote welding the focal point of the laser beam is focused in the plane by means of a mirror that can be rotated in two axes. Due to the long focal length of the focusing lens of up to 2 m, small deviations of the mirror cause long paths in the plane, and thus ensures extremely fast positioning of the focal spot at different welding positions. Thus, with the Remote Welding System (RWS) you may create multi spot welds with arbitrary geometry in a very large working area within the shortest time.

Because of the extended working distance, the **RWSflex** offers an enlarged working area that may reach dimensions of 1450 mm x 3200 mm x 700 mm with a focal length of 1.6 m. The system dynamics were also optimized, leading to further reduced non-productive welding times.

Further highlights of the **RWSflex** are the possibility of offline programming providing more flexible process engineering as well as a freely programmable positioning of the beam exit window. Additionally, the laser beam proofed cover provides a maximum operational safety.

The **RWSflex** is run with CO_2 Slab lasers from the patented DC Series by ROFIN. These lasers offer with their excellent beam quality of $K \geq 0.9$ in the first place the most cost-effective usage. All lasers of the DC product line have a perfect mode structure for the high speed welding with large focal lengths and are therefore the ideal tool for this application. As an option solid-state lasers with high beam quality can also be used.

“We are pleased to be able to set a new benchmark in remote technology with our **RWSflex**. This system is a consequent enhancement of our very successful RWS technology and provides us with new application areas. With its new control and

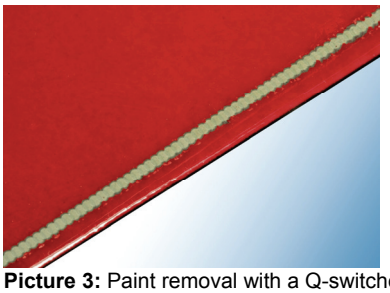
flexible programming this system can be adjusted ideally to our customers' demands.", says Thorsten Frauenpreiß, Managing Director of Rofin-Sinar Laser GmbH. "This system offers new opportunities not only in the field of remote welding, but also in robot supported scanner technology and in many different application areas that we will also display at the fair."

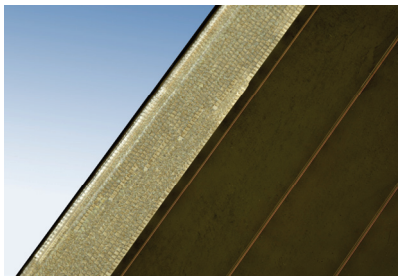
At the LASYS ROFIN will also be presenting an extremely dynamic scanner head in combination with the **DQ x80 S** from a new series of Q-switched solid-state lasers, which was recently awarded with the IF Design-Award.

Picture 2: ROFIN DQ x80 S

In the broadest sense, the application for these lasers with pulse energies of up to 120 mJ is ablation. However, the operational area covers paint and lacquer as well as functional layers in solar cells and displays, cleansing surfaces from dust, dirt and oil, and metallic coatings for the automotive engineering and is topped with the activation of surfaces for subsequent processes. The robot based process with a scanner head provides maximum flexibility and highest ablation rates. The robot and the scanner axes are used simultaneously.

The DQ Series is available in different versions and suitable for diverse industrial requirements. The versions differ in power, pulse energy and equipment. The unique principle of the Q-switch makes peak pulse performances possible that are 1000 times higher than the CW laser power. To meet the high demands of the industry, we have not only a "single" version with one cavity, but also a "double" version with two cavities in one extremely compact housing. The individual cavities can operate independently, offering two beam sources in the same housing.


Picture 3: Paint removal with a Q-switched solid-state laser.


Picture 4: edge isolation of solar cells

All lasers of the DQ Series are equipped with an optical attenuator which facilitates a particularly fine and long-term stable parameter setting, thus ensuring best application results even for sensitive applications such as the selective removal of deposits. First pulse suppression is also integrated into all products in series as standard. This ensures that pulse energy remains constant from the first pulse onwards. Production processes can therefore be fine-tuned and reproduced more simply and above all reliably from a qualitative viewpoint.

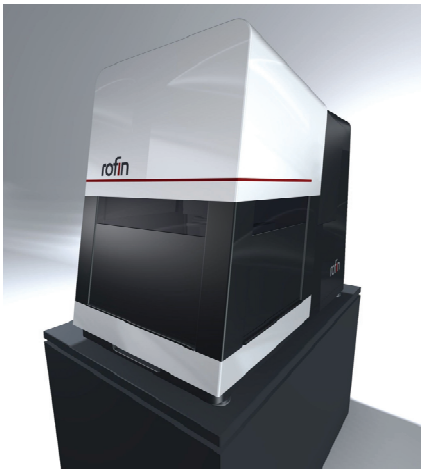
The beams are flexibly directed via optical fibers with 600 µm or 800 µm core diameter. A new square fiber ensures the greatest efficiency in the treatment of surfaces which facilitates treatment of a greater surface area per pulse due to its geometry.

ROFIN is exhibiting the **ROFIN DQ x80 S** as a 'single' version at the fair. This is the most powerful model of the new DQ Series with an output power of 800 watts @ 15 kHz.

FOCUS ON FINE SOLUTIONS

CUBE – the new All-purpose laser work station

The **CUBE**: ROFIN presents an innovative and all-purpose laser work station concept. Most different laser sources can be integrated into a compact and cost-efficient solution for cutting, welding, structuring or marking in manual and semi-automated manufacturing.
ROFIN provides an extraordinarily wide range of laser sources of different technologies such as solid-state, fiber or diode lasers. In addition, ROFIN offers a comprehensive optics and fiber kit for distributing, guiding and focussing the laser beam as well as for process viewing via camera. The universal housing concept of the **CUBE** now allows efficient integration of these components into complete and individually configurable systems ranging from standard solutions to highly specialized applications in research.

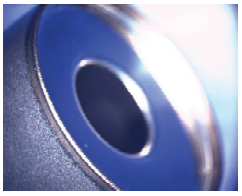


Picture 5: The CUBE, the all-purpose laser work station concept

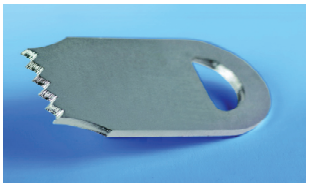
'With the **CUBE** ROFIN can show their very strength - innovative lasers combined with competence in processes and systems'

The strong point about the **CUBE** is its high flexibility, realised by its combination of housing and door construction together with different axis and optics component options. An example may be the combined use of Galvo scanner head and positioning axes for fast exact and large-scale processing, or robot feeding by using the automatic doors. The solid precision milled system base guarantees highly accurate work piece processing. The hood of the housing which can be opened wide making setting and adjustment easy. In production, fast opening and closing doors for loading and unloading - from three sides if required - allow for short cycle times. Thus, the **CUBE** can be perfectly set up for both manual loading and automated feeding via assembly line, robot or lifting stages.

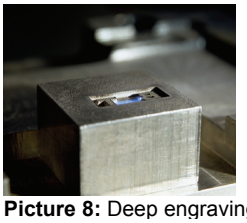
The integrated laser control RCU (Rofin Control Unit) controls the entire process – without the necessity for additional external controllers. The RCU controls the laser parameters, (real-time control of laser pulses, online-process viewing and analysis, pulse-to-pulse stability), the Galvo scanner head (for welding, marking and structuring applications) and the motorized axes (as positioning axis in the PLC procedure or as linearly interpolated process axis). The freely positioned central touch screen makes the handling of the **CUBE** very comfortable. It also allows setting, editing and choosing layouts and PLC procedures. In addition, the control of the entire process and the communication with PLC, e.g. with robot feeding, is possible.



Picture 6: Finest Weld seam



Picture 7: Finest cuts



Picture 8: Deep engraving

Picture 9: Day and night marking

Laser source, beam delivery, optical system, Galvo head or fixed optics – with the **CUBE**, the customer gets a complete system which is individually tailored according to their application. The workstation comes in two different basic configurations: as micro-**CUBE** or as marking-**CUBE**, for cutting, welding and structuring or marking applications, respectively.

SELECT - a class of its own in laser welding

With one universal operating concept, the Select can be operated as an ergonomically optimized manual welding laser, as a deposit welding laser with joystick or as a high-precision CNC system. All process steps are controlled via the multi-functional joystick and a large multi-colour touch screen display enabling semi-automatic laser welding, CNC teach-in or jogging of heavy workpieces. The display shows system functions including CNC control and programming clearly laid out in well-structured graphics and menus.

Picture 10: Unique laser welding system for manual welding, either with joystick or CNC operation

Picture 11: Ergonomic operation of the Select

Pico-Second Laser X-Lase

The **X-Lase** is a compact mode-locked fiber laser with 10-30 pico seconds pulse width and a megahertz repetition rate. The excellent beam quality of the **X-Lase** (M^2<1.5), the ultra short pulse width and the high repetition rate make the **X-Lase** a perfect industrial tool for micro cutting, micro drilling, micro structuring and vaporization with minimal thermal load. The **X-lase** can be connected to most different kinds of processing heads (such as fixed optics or scanner), which focus the light up to 10-30 µm.

Picture 12: X-Lase

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THE MARK OF EXCELLENCE

Label Marker Compact: everything for label marking on 0.3 m²

With the **LabelMarker Compact**, ROFIN offers a new all-in-one label marker. The compact laser class 1 device offers everything necessary for the efficient marking of labels on 60 x 60 cm only.

Picture 13: LabelMarker Compact

The **LabelMarker Compact** takes up rolls with diameters of up to 300 mm and 10 kg weight, and is equipped with an electrical cutting system. Sensors detect the beginning and end of the label and ensure correct feed. The user interface provides for routine operation of the laser marker and the selection of pre-defined marking layouts. The marking field measures 108 x 172 mm and is therefore suitable for large labels, as well.

With ROFIN's PowerLine E series diode-pumped, solid-state lasers, the **LabelMarker Compact** achieves fast marking speeds on virtually all conventional label materials. The laser control based on the Rofin Control Unit (RCU) can be operated via touch screen and allows access to all machine functions and convenient definition of marking layouts. This is done with the tried and tested VisualLaserMaker (VLM) software which comprises all marking contents – from alphanumeric (true type fonts), DXF and BMP graphics to barcodes and 2 D matrix codes.

The **LabelMarker Compact** operates with efficient and low-maintenance Peltier elements and internal air cooling. It requires no external air or water supply and can be connected to any power supply with 230 / 120 V. A TCP/IP interface is available for connection to external devices.

CombiLine Advanced: High Flexibility

With the **CombiLine Advanced** ROFIN presents a stable laser workstation for small- and medium-sized batches. Thanks to its great flexibility, the system is capable of meeting every customer's needs. The **CombiLine Advanced** moves laser head and deflection unit via travel axes in x, y and z direction over a range of 300 mm each – with speed and captivating precision.

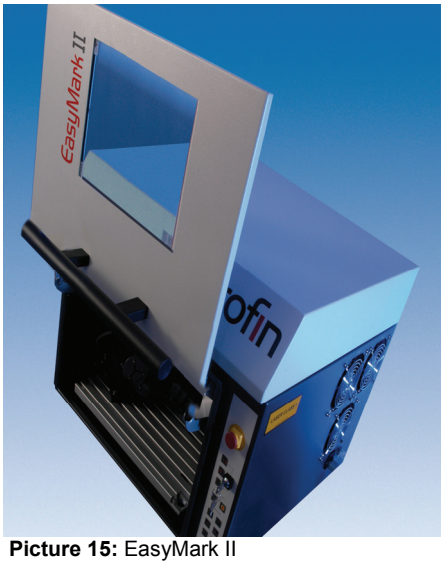
With its robust and stable construction, the worktable carries work pieces of up to 100 kg. For easy loading during the marking process, the **CombiLine Advanced** is also available with a rotary table. Moreover, ROFIN offers both models with a circumferential indexer, which is required for the marking of cylindrical parts. The system's wide range of applications is attributable to its modular concept, which integrates various different laser markers out of ROFIN's extensive product line. Due to these advantages, ROFIN's **CombiLine Advanced** guarantees efficient processing of various applications at small and medium batch sizes.

Picture 14: CombiLine Advanced

To ensure optimal working height, the **CombiLine Advanced** is available for seated or standing operation. Process visualization via a big colour TFT touch screen monitor contributes to maximum operating comfort. The operation interface integrates both monitor and touchpad mouse. Furthermore, an observation window offers direct insight into the spacious operating area. With its positioning concept, its stable and precise construction and its smart ergonomics, ROFIN's **CombiLine Advanced** provides all the features necessary for long-standing smooth and efficient laser marking.

EasyMark II: Compact and User-friendly Laser Marking System

EasyMark II is one of the most compact laser marking devices on the market. Marking tasks on metallic surfaces and plastics are handled effortless and with perfect results. The laser marker operates with a one-phase power source and does not require any external cooling. Due to the enclosed marking area, operation of the system is uncritical. The **EasyMark II** is a laser class 1 device and has got the safety requirements of a CD player.



Picture 15: EasyMark II

Marking possibilities are manifold when it comes to the **EasyMark II**. Metallic surfaces and plastics, plain and curved parts, standard marking tasks or serial numbers, stationary or mobile use – you're simply flexible with the **EasyMark II**. Program-controlled axes (one linear Z-axis and a circumferential indexer) can be easily integrated

into the system for more marking freedom. The laser marker holds parts up to a size of 450 x 150 x 200 mm (W x H x D). The system is operated by a diode-pumped Nd:YVO_4 laser with a wavelength of 1064 nm.

With VisualLaserMarker (VLM) the **EasyMark II** features sophisticated and flexible marking software. Running on a standard PC environment, layout and transfer of the marking contents is a breeze. VLM offers a wide range of marking functions, fonts and predefined laser parameter sets. The user-interface is clearly arranged and can be operated easily, which reflects ROFIN's long-time laser marking expertise. Focusing and positioning aids ensure that the device can be easily operated by anyone after short instruction.

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characters: 11,500

The press announcements can be downloaded from www.rofin.com. Product pictures can also be downloaded from our website at http://www.rofin.com/bilder.php.

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