KD Info

2nd Edition 2016

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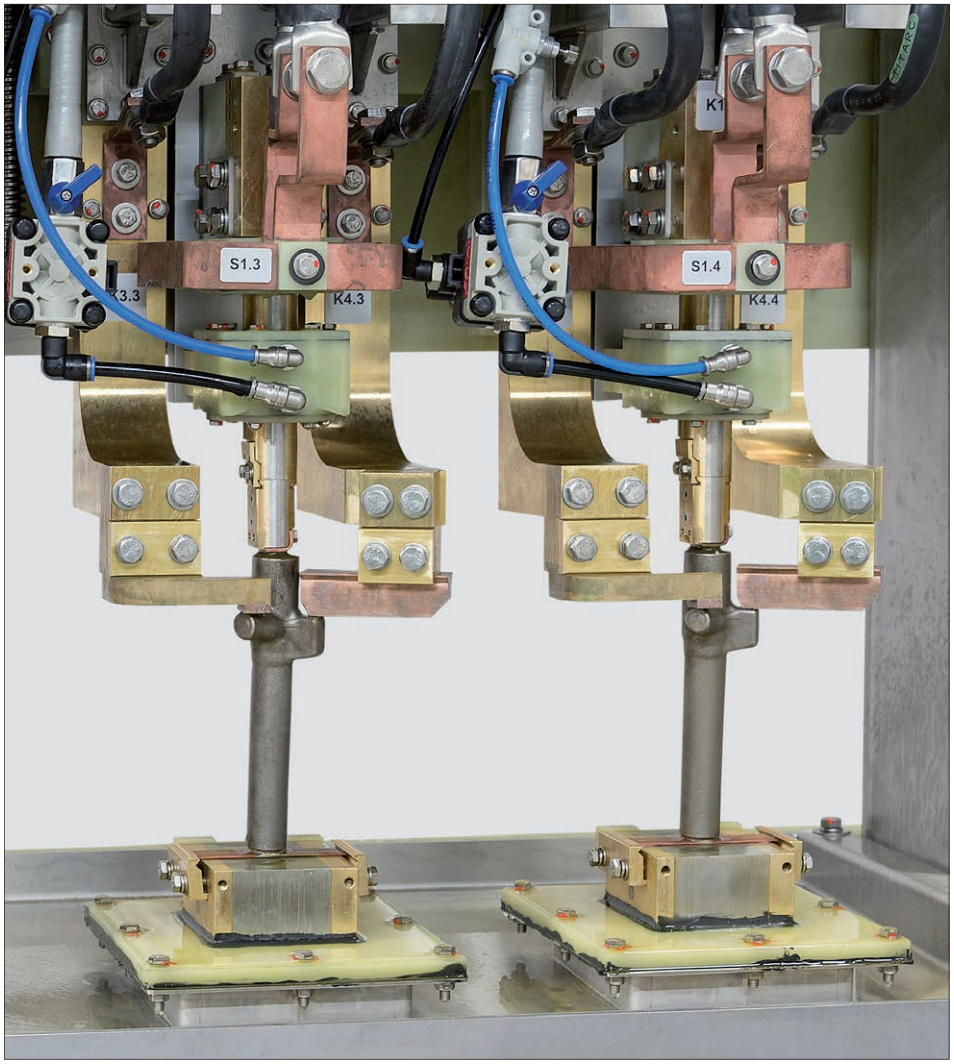
Contact

KARL DEUTSCH
Pruef- und Messgeraetebau GmbH + Co KG
Otto-Hausmann-Ring 101
42115 Wuppertal · Germany
Phone (+49-202) 71 92-0
Fax (+49-202) 71 49 32
info@karldeutsch.de
www.karldeutsch.de

DEUTROMAT: Quadruple Vertical Magnetization for Hirschvogel Automotive

The Hirschvogel Automotive Group is one of the largest worldwide operating automotive suppliers in the area of massive forming of steel and aluminium with subsequent machining.

The product range of the company comprises injector bodies, being a component of the fuel injection system of diesel engines. Due to the increasing production output the existing facilities were no longer sufficient. Therefore it was decided to purchase a further testing system. For the inspection of injector bodies with two lateral noses a con-



Two of the four vertical magnetization stations for injector bodies

Continued on page 2

KARL DEUTSCH

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cept for fully automatic magnetic particle testing (MT) with camera evaluation was developed.

In October 2016, KARL DEUTSCH delivered a DEUTROMAT system to the company BOLL Automation, with a quadruple vertical magnetization for this inspection task. The MT system was then integrated into a complex testing unit with robotic loading. The inspection unit including the higher-ranked control was provided by the co-operation partner BOLL Automation. The camera-aided evaluation was implemented by the parent company Automation W + R.

The DEUTROMAT comprises four separate vertical magnetization stations which are arranged side by side. The lower contact is fixed and the upper one is motor-driven adjustable in vertical direction. Every magnetization station provides four contacts, which are pneumatically operated on an individual basis. Thus, the upper and lower surfaces and the two lateral noses are precisely contacted. This machine concept permits a parallel magnetization of four test pieces, which are automatically loaded and unloaded by a robot. The entire construction is mounted to a free-standing frame.

A very special feature is the complex inspection technique. A cycle time of 12 seconds for four test pieces was permitted. The field flow was provided by means of stationary narrow high-current coils installed at the top and at the bottom of the station. The magnetic induction is executed by centrically arranged lamelled yokes. In addition, every station contains four current flow circuits, which can be operated individually or combined, depending on the test piece properties. Furthermore, the system provides a freely adjustable program sequence from the DEUTROFLUX MEMORY control unit. Thus, the system contains 16 high current transformers for the current flow and four for the field flow. The impressive number of 20 transformers is housed in a separate electrical cabinet above the machine frame.

Wetting with FLUXA media during the magnetization and the subsequent blow-off is achieved by a sophisticated circular air nozzle arrangement. As a result, excess test medium is removed and the contamination of the robotics is minimized.

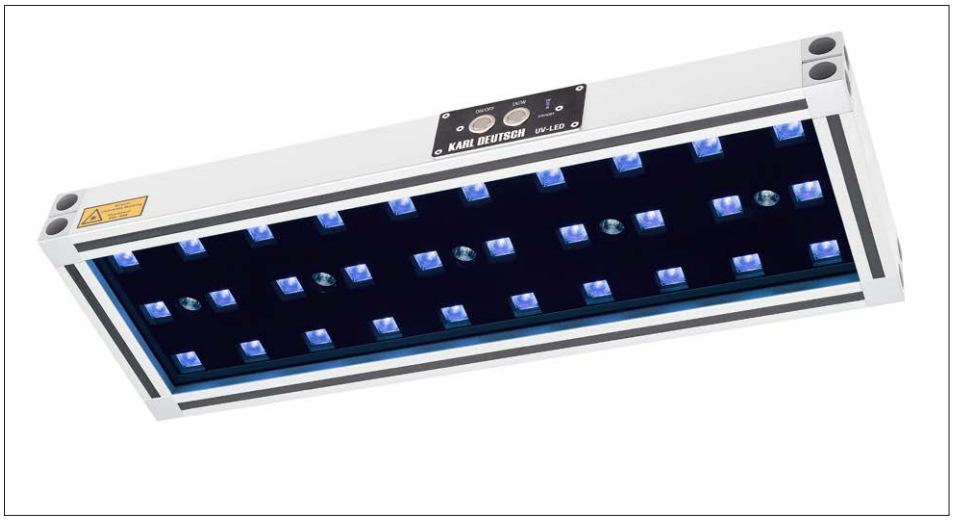
In addition to the challenge concerning the testing technique, the very restricted space conditions posed a particular problem. It was difficult to implement an extremely space-saving concept with regard to test mechanics, magnetization technology, cable routing and wetting. Our MT construction department headed by Dipl.-Ing. Tom Dierks succeeded in fulfilling the high requirements of the customer. The DEUTROMAT machine has been successfully put into operation at BOLL Automation. In December 2016, the test unit was delivered to Hirschvogel Umformtechnik GmbH in Denklingen, Germany. The start of operation is planned for the beginning of 2017. **Jk**

www.karldeutsch.de » Products » Magnetic Particle Testing » Stationary Test Benches » DEUTROMAT

DEUTROFLUX UV-LED Large Area Lamp: Now with 50% more LEDs

The universal UV-LED Large Area Lamp for stationary testing with fluorescent penetrant and magnetic particle testing is now available with 30 instead of the previous 20 UV-LEDs (365 nm). Due to the higher efficiency (lower energy consumption), the lifetime of the individual UV-LEDs could be increased considerably. The higher number of UV-LEDs additionally ensures a significantly improved homogeneous light distribution.

With the introduction of the revised large-area lamp we offer a certificate of the spectral irradiance according to ASTM E 3022



UV-LED lamp with 30 UV and 6 white light LEDs

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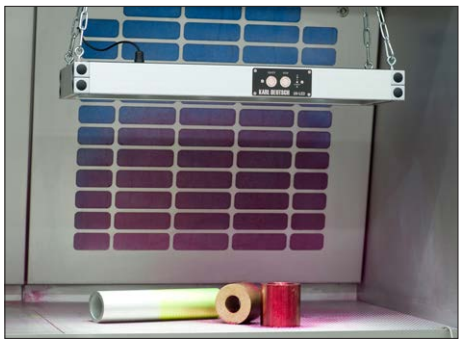
at customer‘s request.

As before, also several lamps can be connected in series and centrally operated via one control unit. Furthermore, it is possible to switch between UV and white light at any time. The well-proven passive (fanless) cooling system has been maintained.

As a result, the large-area lamp is particularly robust and protected against mechanical influences from the industrial environment.

A microcontroller unit controls and monitors important parameters, e. g. temperature and operating time.
In order to optimize our maintenance service, these data are stored in the lamp and can be read out in the factory or by a service technician. **Gd**

www.karldeutsch.de » Products » Magnetic Particle Testing » UV Lamps and Accessories » UV LED Large Area Lamp



From white light...

... by pressing a button...

... to UV light

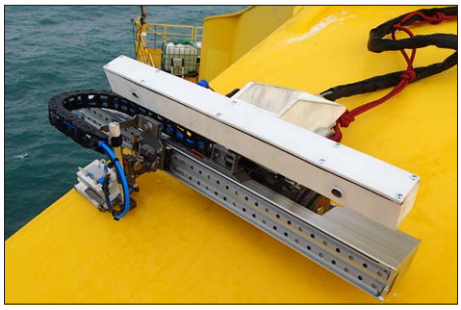
GEKKO: Inspection of Tripods of Offshore Wind Energy Systems

Due to the increasing importance of wind energy, wind turbine generator systems are installed in many places. Particularly effective are offshore wind parks on the sea.

In general, an offshore wind power installation consists of a foundation structure rammed into the seabed as well as a steel tube tower. The foundations can be very different. In any case, these are always welded constructions made of steel plates with wall thicknesses of up to 100 mm, welded as butt welds and T-joints. The traditional manual testing with evaluations according to the DGS method is going to be replaced by phased array imaging. The advantages are:

- Higher testing speed
- Improved determination of defect geometries and sizes
- Higher reproducibility
- Image documentation, which enables exact comparisons of recurring inspections

Especially the Total Focusing Method (TFM) has proven to be very helpful because of the very high image resolution which allows more precise evaluations of indications compared to the reflector size estimation according to the DGS method. For this application the portable phased array instrument GEKKO is used, which supports the Total Focusing Method (TFM). The probes of KARL DEUTSCH with 32 and 64 elements and a frequency of 5 MHz are coupled via a water gap, which permits inspections on vertical areas and also horizontal areas in overhead position. The water gap ensures a constant coupling – also in the case of uneven surface coating. For angle beam insonification the probe is mounted on a wedge with the water gap between the wedge and the object surface.



Scanner with array (64 elements, 5 MHz)

Testing in overhead position

The movement of the probe is carried out by means of a remotely controlled scanner with magnetic wheels. **RW**

www.karldeutsch.de » Products » Phased Arrays (UT) » Instruments and Systems » GEKKO

GEKKO: Ultrasonic Imaging with the Total Focusing Method

The Total Focusing Method (TFM) determines the interaction between all array elements and all pixels in a defined Region of Interest (ROI). Each element transmits separately a sound pulse and all elements receive the reflected signals.

The individually transmitted and received sound fields provide a very large divergence due to the small pitch of each element. That means that the TFM method “looks” into all directions.

An impressive example is a thick-walled welded T-joint. The wall thicknesses are 135 mm and 110 mm. For a performance test seven side-drilled holes with a diameter of 2 mm distributed over the cross section serve as test reflectors, see figure 1.

For this application a phased array probe from KARL DEUTSCH was selected – with 64 elements, a frequency of 2 MHz and a pitch of 1 mm (distance between 2 elements). The TFM-B-Scan in figure 2 illustrates that all seven holes and even the weld contour are correctly imaged.

The GEKKO phased array device from KARL DEUTSCH served as testing instrument for this application. Providing 64 parallel channels, it is possible to use array probes with up to 64 elements. The TFM software is integrated.

This application demonstrates that TFM can image an area which is much larger than the aperture of the probe and that the focusing capability extends over the whole depth and width range of the defined test zone (marked blue in figure 2).

If such T-joints are to be tested over a larger weld length, the probe is fed along the weld and many similar TFM-B-scans are generated. The cumulated test result can be displayed in C-scan or end view format. **RW**

www.karldeutsch.de » Products » Phased Arrays (UT) » Instruments and Systems » GEKKO

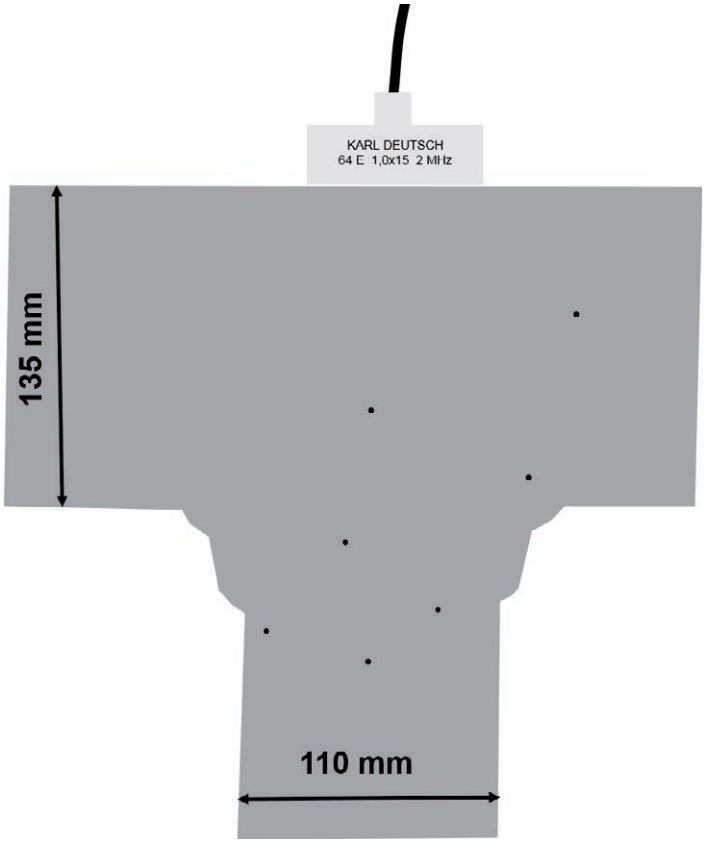


Fig. 1: T-joint with seven side drilled holes, Ø 2 mm

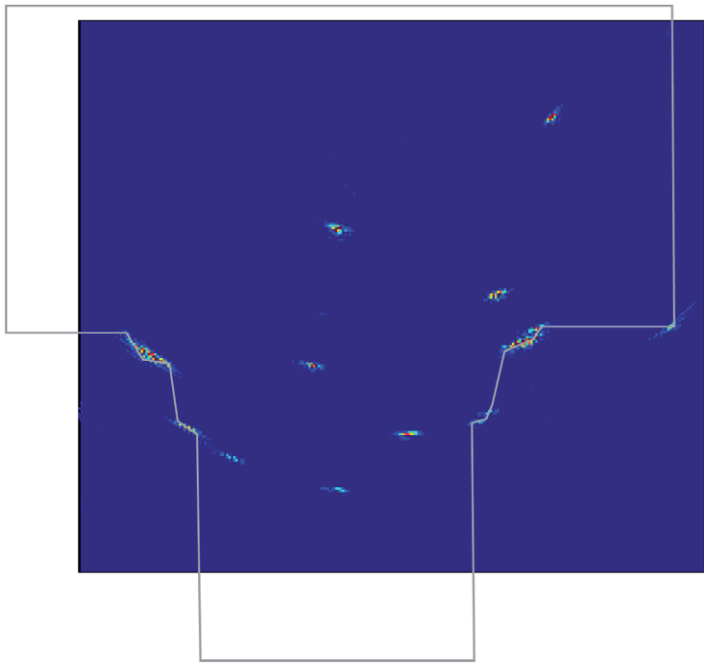


Fig. 2: TFM-B-Scan of the T-joint

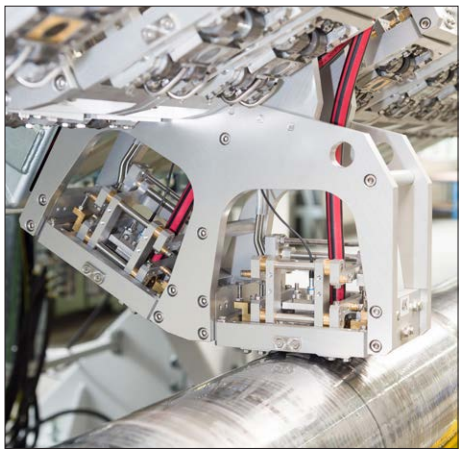
ECHOGRAPH-RPTS: Testing Bridge for Ultrasonic Inspection of Steel Bars

By now, three KARL DEUTSCH ultrasonic testing systems are in operation at the company BGH Edelstahl. Since 2012, a double test portal has been used for bar diameters up to 1 m. A second test portal for bar diameters from 60 mm to 160 mm has been in operation since the beginning of 2015. Since midyear 2016, bars with a diameter range of 100 mm to 400 mm have been tested with a third system, which is the focus of this article. In general, three test angles are applied: The straight-beam insonification is used for the inspection of core defects and the angular insonification in both circumferential directions ensures the detection of surface defects.

Since the bar lengths to be tested can be up to 18 m and the transport concept allows only a lateral feed of the bars, a self-supporting test bridge had to be implemented. At the left end of the test bridge, a calibration station was installed to quickly check the testing sensitivity of all probes. This results in a total length of 31.5 m of the entire testing machine. In order to ensure a complete inspection with the required overlap of the test tracks and the required test speed, six testing carriages are in operation. Each carriage contains an inspection system with different test frequencies for ferritic and austenitic materials. An elaborate quick-change mechanism enables conversion to the current material to be tested. In total, the testing machine contains 48 ultrasonic probes with 24 active probes at a time. Each testing system works with four probes: The near-surface region is inspected with a T/R probe with a sensitivity of 0.8 mm flat bottom hole (FBH). The core of the bar is tested by means of straight-beam insonification with a sensitivity for FBH 1.0 mm. Two further probes for angular insonifcation in both circumferential directions are adjusted with a side-drilled hole with a diameter of 3.0 mm.

24 (6 groups with 4 probes) probe holders

After feeding of the bars, the test parts are put in rotation and the probes are placed on top. Each carriage tests a part of the bar length by helical scanning in order to cover the whole volume range to be tested. All probes are coupled via a water gap. They are mounted in separate gimballed probe holders, thus permitting an optimal guiding along the bar surface.



Gimballed probe holder

Furthermore, the testing system contains an optical camera monitoring system of the bar ends, a return-to-defect function, a convenient C-Scan software with 12 o'clock recognition and a colour marking device. **WD**

Product video on our Youtube channel "NDTChannel" » ECHOGRAPH-RPTS

www.karldeutsch.de » Products » Ultrasonic Testing Systems

KD-Check: New Semi-Automatic Penetrant System for our Application Laboratory

In early 2016, a new semi-automatic penetrant system from our own production was put into operation in our application laboratory, where enquiries from our customers can be processed practically. But also newly developed or existing KD-Check testing media are tested here and optimized under realistic conditions.

The testing system is well suited for serial tests. It enables the optimization of the testing process and the designing of new testing systems for different inspection tasks of our customers. Especially the consumption of the testing media and the washing water as well as the reconditioning of the washing water can be assessed in a realistic manner. All testing parameters are freely adjusted, monitored and documented via a PLC control unit. Fluorescent or red penetrant media can be applied. For intermediate cleaning the two methods "direct water-washable" or "post-emulsifiable" can be selected. Drying is executed with warm air in a tunnel furnace. The development of crack indications can be carried out electrostatically with dry developer, solvent-based wet developer or with water-based developers. Thus, all variants of penetrant testing methods can be applied.

The penetration testing system provides the following stations:

- PLC control unit
- Pre-cleaning
- Application of the penetrant medium (by spraying or immersion)
- Drainage station
- Emulsifier tank
- Intermediate cleaning with adjustable water pressure and quantity
- Drying in a tunnel furnace with adjustable temperature and time
- Development tank (heatable) for water-based developers
- Electrostatics unit for the application of dry developer

We would be happy to answer your questions about our KD-Check penetrant systems and test media. Please contact

Mr. Robens (+49-202) 7192-150 or
Dr. Goerz (+49-202) 7192-264 or
Dr. Wagner (+49-202) 7192-145

All contact persons are available through the common e-mail address chemicals@karldeutsch.de **Wn**

**www.karldeutsch.de »
Products »
Penetrant Testing**

Stationary penetrant testing system (left) and U-shaped penetrant testing system in the application laboratory of KARL DEUTSCH

FLUXA and KD-Check: Environmental Protection and Operational Safety

In recent years the requirements concerning environmental protection and operational safety increased. Furthermore, the European regulation REACH for chemicals and the international regulation GHS were implemented. This demands forward-looking developments as well as adaptations of existing products.

Already for years, all water suspendable FLUXA magnetic particle concentrates as well as the water-based FLUXA spray HRS of the KARL DEUTSCH company in Wuppertal are free of labelling obligation, due to future-oriented selection of suitable raw materials, thus offering user-friendliness and operational safety.

From an ecological and economical point of view the water-based FLUXA products are convincing with respect to their environmental safety and significant cost savings since they can be disposed into the wastewater system. This was certified by the Hygiene Institute from the German town of Gelsenkirchen.

Also the oil-based magnetic particle concentrates were further developed. In this field the two concentrates FLUXA HS-O and TS-O have to be mentioned. For two years now, they have been free of labelling obligation because the paraffin-based oil carrier was replaced by an alternative carrier from sustainable resources.

High contrast crack indications with new FLUXA recipe

In combination with the newly introduced FLUXA Bio-Oil which is also free of labelling obligation and made from renewable resources all three products offer a powerful and safe alternative to the current mineral oil-based products, especially under application-technical aspects. The FLUXA Bio-Oil complies with all requirements of DIN EN ISO 9934-2.

In addition to the FLUXA products also the KD-Check penetrant media (which are sample-tested according to DIN EN ISO 3452) are continuously further developed and adapted to new regulations, laws and customer requirements. According to environment approval certificates stating excellent biodegradability, many of the penetrants from KARL DEUTSCH can be diluted and disposed directly into the wastewater system after consultation with the local authorities, thus saving a high amount of disposal costs. In addition to the high environmental compatibility, products like KD-Check FWP-2 and KD-Check FWP-22, which are without labelling obligation, provide high-contrast crack indications and ease of use. **Gz**

www.karldeutsch.de » Products » Magnetic Particle Testing » Inspection Media and Accessories

www.karldeutsch.de » Products » Penetrant Testing

Service for our Portable Instruments: Competent, Individual, Safe

Regular maintenance of our portable instruments ECHOGRAPH, ECHOMETER, GEKKO, LEPTOSKOP, DEUTROMETER and RMG for manual testing guarantees a constantly high safety when processing individual inspection tasks. Nowadays, this is standard and in many areas even an annual verification is required.

Individual instrument testing and certification

Certification: Fast and uncomplicated

The ever-growing number of certifications and verifications shows the increasing demand for this service. As a manufacturer, KARL DEUTSCH has been successfully offering the service for many years. We always strive to keep the processing time for certifications as low as possible. Standard checks usually are carried out in a maximum of 4 days (depending on the type of device). Even with complicated tests it takes a maximum of 10 days for the device to be ready for use again.

Reliable: Our spare parts service

It goes without saying that we also offer a comprehensive repair and spare parts service for all devices. In addition to short repair times in case of need, we also guarantee the supply of original spare parts 10 years after purchase of a KARL DEUTSCH instrument.

Consultation of customers in the application laboratory

The application laboratory pools technical competence

Almost all technical inquiries concerning our products are answered by our application laboratory. If the respective inquiry can not be clarified via telephone, sample pieces can be sent in for individual testing using the entire range of instruments and probes.

The outcome of this is a detailed laboratory report for the customer with the results of the measurements. The report contains a recommendation for instrument, probes and test equipment, which should be used to achieve an optimal measuring result. This is particularly useful in case of complex applications.

Questions concerning technical details of instruments are answered by the respective specialist departments, and in case of particularly difficult questions, our customers may also discuss the matter directly with the R&D department since all products are developed and manufactured in Wuppertal, Germany.

NDT training courses

KARL DEUTSCH also offers a comprehensive course and training program for all KD products and the respective testing methods UT, MT and PT. If required the participants of the level 1 courses can be certified by the German NDT society DGZfP. **Hs**

Tube 2016

During the five days of the fair around 70,000 professional visitors from 130 countries came to Duesseldorf, most of them from Germany, Italy, Turkey, France, Poland and the Netherlands. With more than 65%, the proportion of international guests is very high, about one third of them is from overseas.

This means that the Tube fair is an important market place for the presentation of new products and a major communication platform for the relevant industrial sector, also in times which are not always that easy for the steel industry. This year, for five days, KARL DEUTSCH presented itself in a new appearance on 32 m², demonstrating the entire product range. The focus was on the ECHOGRAPH ultrasonic testing systems. Furthermore, numerous portable testing instruments and testing agents were on showcase:

- GEKKO phased array instrument with a 2D-scanner for corrosion mapping as well as a single-axis scanner for weld testing with conventional sector scans and also with TFM (Total Focusing Method)
- Multi 2000 phased array module with a small immersion tank for tube testing
- ECHOMETER 1077 in a rack version and ECHOGRAPH 1095 with a line recorder and a small immersion tank for multichannel wall thickness measurement on tubes
- Testing media for MT and PT inspection (FLUXA and KD-Check)

"The feedback on the instruments and systems was excellent during the whole five days of the fair," says Dipl.-Geol. Stefan Kierspel (product manager for phased array and ultrasound), who was in charge during the show. Numerous interesting discussions with existing customers and potential new customers were conducted. **Hs**

Dr. Helge Rast (KARL DEUTSCH), Martin Bang (Wuppertal Marketing), Dr. Wolfram Deutsch (Managing Director of KARL DEUTSCH), Andreas Mucke (Mayor of Wuppertal), Heinz Weber (KARL DEUTSCH), Hans-Dieter Harbecke (KARL DEUTSCH), Dr. Rolf Volmerig (Economic Promotion Wuppertal) and Jürgen Altmann (Economic Promotion Wuppertal), from left to right

WCNDT 2016 in Munich

For the first time after 46 years, this year's WCNDT took place again in Germany. Munich provided the venue of the five day world congress on non-destructive testing of materials. At this high-profile event around NDT products, research and services, KARL DEUTSCH appeared as a sponsor and numerous products were shown at a representative booth.

With a record number of participants from 71 countries, including a participant from the South Pacific island of Vanuatu, there was plenty of opportunity and time for a professional exchange on an international level.

During the WCNDT week, numerous committees of EFNDT and ICNDT met with exceptionally high participation and far-reaching decisions. KARL DEUTSCH was represented with two well-attended lectures.

The next international conferences will be the ECNDT 2018 in Gothenborg, Sweden, and the WCNDT 2020 in Seoul, South Korea. **Hs**

Timur Sayfullaev and Stefan Kierspel with the phased array instrument GEKKO

Dr. Matthias Purschke (President of DGZfP), Dr. Mike Farley (President ICNDT), Dr. Wolfram Deutsch (Managing Director of KARL DEUTSCH), from left to right

KARL DEUTSCH Summer Party

As already in the past years, the Weather Gods had the best of intentions when providing good weather for the participants of the KARL DEUTSCH summer party. Around 200 employees, family members and former colleagues enjoyed the fantastic late summer day on the site around our Works 2 premises.

After a short address of welcome from the managing director all of the guests could "charge their batteries" and gain strength for the upcoming afternoon. The delicious buffet of the local butcher shop "Metzgerei Kaufmann" fulfilled all wishes - as already in the past years.

Happy faces

Continued on page 11

Continued from page 10

Catering service with barbecue and refreshments

Active with enthusiasm

After a short recovery break numerous attractions could be explored.

While the younger children favoured the children's construction site and the inflatable jumper, the elder ones enjoyed first Segway experiences or tried to master the slot car racing track with cars operated by physical force and thus being quite strenuous. Those with even more power were able to let off steam at the kicker, goal wall shooting or table tennis.

During the breaks and after "work" there was also plenty of time for one or more exhilarating or even more profound conversation with colleagues you either meet day-to-day or perhaps not that frequently.

The afternoon was culinarily completed by the obligatory KARL DEUTSCH ice cream cup, most deliciously prepared by the skilful ice-cream man.

And so it was no surprise that at the end of the day everybody went home being perfectly satisfied. **Hs**

Integration Project in Wuppertal: The Musical “Between the Worlds”

More than 8,000 migrants currently live in Wuppertal. In order to promote the integration of young and motivated people, a project implemented in Cologne for the first time was brought to Wuppertal by the company RIEDEL Communications.

Like KARL DEUTSCH, the company RIEDEL is active on a global scale, and consequently both companies have an open-minded worldwide understanding which is imperatively necessary for their global business success. RIEDEL Communications provided one of their factory buildings. The companies Leyendecker and In-lights from Wuppertal provided the light and sound technology and the company Kaspar Catering took care of food and refreshments. A total of six-digit sponsoring was required to make the project possible in Wuppertal.

Most of the young actors from many countries (e. g. from Syria and Afghanistan) currently live in Wuppertal and were prepared for the performances by the team from music4everybody! e.V. in many rehearsals. Dr. Wolfram Deutsch and his family watched the musical on November 21st, 2016. The whole family loved it!

After six months of rehearsal: An exciting professional performance of the amateur ensemble

The musical provided deep insights into the fears and concerns of young refugees

The musical covered music from the Western culture and from the home cultures of the new Wuppertal citizens. Also difficult topics like the Shari‘a and conflicts within Muslim families with different attitudes towards life were staged impressively. The 2.5 hour show ended with thunderous applause. Many contacts were made between Germans and migrants.

Effortless, like in a play the migrants learned the German language. The sometimes difficult time in a new and unknown country thus could be filled meaningfully and many objectives were achieved! **WD** (photos by Christiane Elser)

KARL DEUTSCH competes at the Sky Train Race

Its tradition cannot really compete with the over 100 years of the famous train in Wuppertal. However, the Sky Train Race, with about 6,000 participants nowadays, deserves an entry into the Wuppertal calender of events.

This also applied to KARL DEUTSCH: This year, 15 participants lined up to conquer the bottom of the valley running, thus representing the largest team since the beginning of participation. The meeting point in the early Sunday afternoon was the red, 3 by 4 m pavilion of KARL DEUTSCH, which at the same time served as a starting point and a catering station for the active people. The Friedrich Engels Garden in the back and the bustling home straight nearby, the exposed place provided a perfect feeling at the professionally organized family event.

For the first time, the runners of the companies Wuppertaler Maschinenkooperation, Maschinenfabrik Rausch as well as Weinstein Neumann were our guests and contributed to the good atmosphere in and around our pavilion. The wheather was perfect and finally after the five kilometers run all KARL DEUTSCH runners returned, exhausted but happily - one or the other with minor injuries.

By all means, everyone wants to participate again next year - of course better trained - so the good intent, which naturally is also true for those who were unable to attend this year. Maybe we'll set a new participant record.

But below the line, the ancient Olympic motto is true: Being there is all that matters! And they enjoyed themselves thoroughly. For all those who want to save the date: The next Sky Train Race will take place on July 2nd, 2017. **Hs**

The KARL DEUTSCH team: Focused with enthusiasm

New Edition of the Book “Nondestructive Smiling”

After a writing break of several years, Prof. Dr.-Ing. Volker Deutsch is breathing new life into one of his favorite projects. The popular book on “Nondestructive Smiling“ (as it is called in KARL DEUTSCH jargon) needs a new revision.

Dr. Wolfram Deutsch and Prof. Volker Deutsch are about to plan a new “Nondestructive Smiling” book

Twenty years after the first edition, plans were initiated for a revised version. The launch is scheduled to take place in time on his 85th birthday in 2017, at the latest. A first call had already appeared in the Journal of the German Society for Nondestructive Testing (DGZfP) and had received numerous replies. In line with the KD-Info and on the occasion of the 84th birthday of Professor Deutsch (on December 13th, 2016) we are now looking for co-authors. Dr. jur. Elke Herbsthofer from the publishing house Castell Verlag will again be the editress and will take care of form and printing. Dr. Michael Platte, who worked many years for KARL DEUTSCH, being technical manager and authorized representative when he retired in the year 2013, will sight the numerous mails. Dr. Wolfram Deutsch also put pen to paper and collected several anecdotes about his 16 years as the managing director of KARL DEUTSCH. **WD**

Cartoon

The graphic artist André Poloczek, with his artist name POLO, lives and works in the town of Wuppertal. His cartoons are well known from many daily newspapers and regular exhibitions.

For the KD-Info he prepares scenes of non-destructive testing humorously. **WD**

Dr. Wolfram Deutsch and POLO

Steel Expertise for our Marketing

Since February 2016 an external partner has been supporting us in the marketing department. Whether brochures, sales support measures, the realisation of trade fair appearances or brand strategy measures, Oliver Haas implements many of the tasks that arise at KARL DEUTSCH, and incorporates his own ideas.

Oliver Haas looks back on 12 years of experience in the steelmaking and processing industry. After working for large advertising agencies and as a long-term marketing manager at the companies DEW (Deutsche Edelstahlwerke) and SCHMOLZ + BICKENBACH, he started his own business and founded the company Marktplan around six years ago.

Timur Sayfullaev from the ultrasound laboratory explains technical details to Oliver Haas

Since then, he has been providing medium-sized companies with his know-how as an external marketing manager or advertising agency.

"We wanted to push our marketing activities, further professionalise our corporate image and ensure that our sales and distribution is supported by numerous powerful measures," says Dr. Wolfram Deutsch. **Hs**

New Colleagues at KARL DEUTSCH

Since September 1st, 2016, Dipl.-Ing. (FH) Reinhold Engels has been responsible for sales and customer consulting in Germany for the post code areas 40-41, 44-47, 50, 52-56 and 66-67. Mr. Engels has many years of NDT experience, especially in the field of ultrasonic testing and takes over the position from Mr. Stefan Kierspel who changes within the company KARL DEUTSCH to the product manager position for ultrasound with a main focus on phased array technologies.

Since November 1st, 2016, Mr. Florian Zech has been employed in the field of penetrant testing systems as a certified technician. He supports the team in projects and is available to our customers as a technical contact person.

Trade Fairs and Events

09 - 12 May 2017
31st Control
International trade fair
for quality assurance
Hall 1, Booth 1410
Neue Messe, Stuttgart
Germany

16 - 19 October 2017
26th testXpo
International Forum for Materials Testing
at the company Zwick
August-Nagel-Str. 11, 89079 Ulm
Germany

30 May - 01 June 2017
Les Journées COFREND
Palais de Congrès
Strasbourg
France

13 - 17 November 2017
15th APCNDT
Asia Pacific Conference for
Nondestructive Testing
Singapore

25 - 29 September 2017
SCHWEISSEN & SCHNEIDEN
2017 as a guest in Duesseldorf
Messegelaende Duesseldorf
Germany

www.karldeutsch.de »
Dates and Events

About KARL DEUTSCH

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Pruef- und Messgeraetebau
GmbH + Co KG

The privately owned company KARL DEUTSCH was founded in 1949 and develops and produces instruments for non-destructive material testing. Portable instruments, stationary testing systems, sensors and crack detection liquids are produced by 130 motivated employees in two works in Wuppertal. Additional 20 employees in international offices and a worldwide network of dealers support the export business which accounts for more than 50% of the turnover. Characterised by continuous innovation and product reliability, the trade marks **ECHOGRAPH**, **ECHOMETER**, **DEUTROFLUX**, **LEPTOSKOP**, **FLUXA**, **KD-Check** and **RMG** are well-recognised. Our customers are metal producing and processing industries, e. g. steel works, automotive companies and bearing manufacturers. Typical test tasks are ultrasonic weld testing, detection of shrink holes in castings, crack detection in forgings with magnetic particles and dye penetrants, safety components for railway and aerospace as well as the wall and coating thickness measurement.

Main Offices and Manufacturing Site for Portable Products (Works 1)

Offices and Manufacturing Site for Testing Systems (Works 2)