KD-INFO

Edition 2026

System-Based Revamping: Intelligently Modernising Ultrasonic Testing Systems

KARL DEUTSCH

Contents

Editorial

Dear Customers, Partners and Friends!

These are troubled times. A new war is breaking out in the Middle East and will have a negative impact on the global economy. The engineering sector for special-purpose machines usually reacts very sensitively to such situations. Nevertheless, we are pleased to report that our order books are full across all system types (UT, MT and PT). The Chinese market also remains important and continues to be successful for KARL DEUTSCH. Industries are changing: whilst the automotive sector is under pressure, several orders, for example from the defence sector, are keeping us busy.

New and successful products have been launched or established in the market: the new portable UV lamp is selling very well. An increasing number of ROWA bar testing systems are now operating with our probes. The refurbishment of ROWA systems with new ECHOGRAPH PAUT electronics and ECHOVIEW software is also an important field of business. The special-purpose machinery division has expanded its workforce, and increasingly complex testing systems – e.g. incorporating robotics and/or complex component or sensor handling – can be found on the order and enquiry list. CRACKVIEW for PT testing is currently undergoing trials.

The remodelling of Works 1 is in its final stages. By May 2026, the worst should be overcome. Fifty employees will gradually return to the building, and the car parks will be available again. It has been a difficult time for the employees. The remodelling will provide an additional 1,275 m² of space for production and offices. We intend to celebrate this in style with customers and friends of the company on the 1st of October according to the motto “77 Years of KARL DEUTSCH”. The online registration tool is now available (URL and QR code on page 28 in the “Events and Trade Fairs” section).

I’m really pleased that two of my children have already completed internships at KARL DEUTSCH. This summer, my eldest son will also be getting to know the company after finishing his university studies. There’s clearly a keen interest from the fourth generation, and that motivates me to keep developing this company.

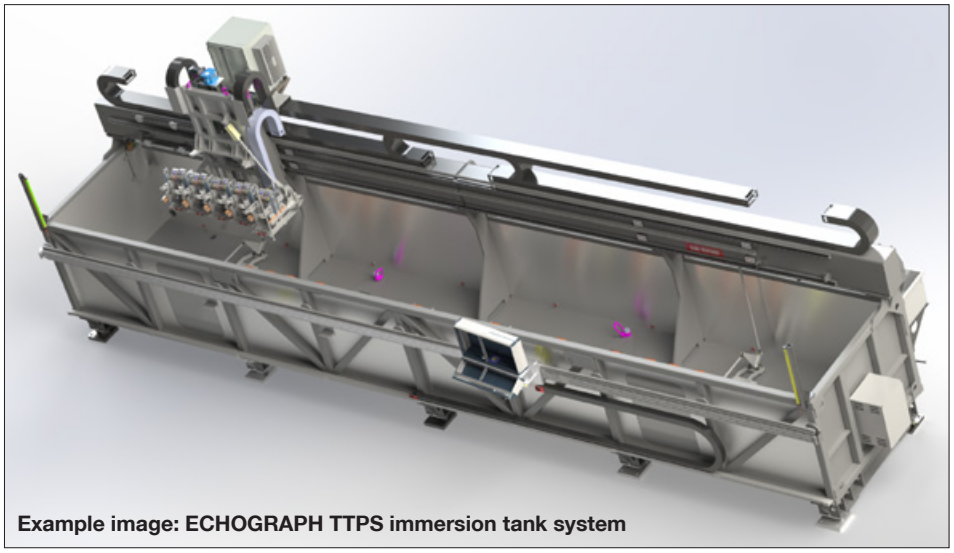
Yours sincerely,

Dr. (USA) Wolfram A. Karl Deutsch

Reconstruction progress of Works 1 in November 2025

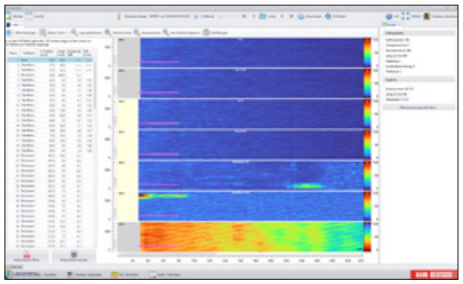
ECHOGRAPH 1170 TTPS: High-Precision Ultrasonic Testing of Complex Titanium Alloys

Last year, KARL DEUTSCH acquired two major contract orders from China. Both projects are currently in the implementation phase and mark a further milestone in our company's international positioning. They also reflect the global confidence in our technological capabilities and systems expertise.



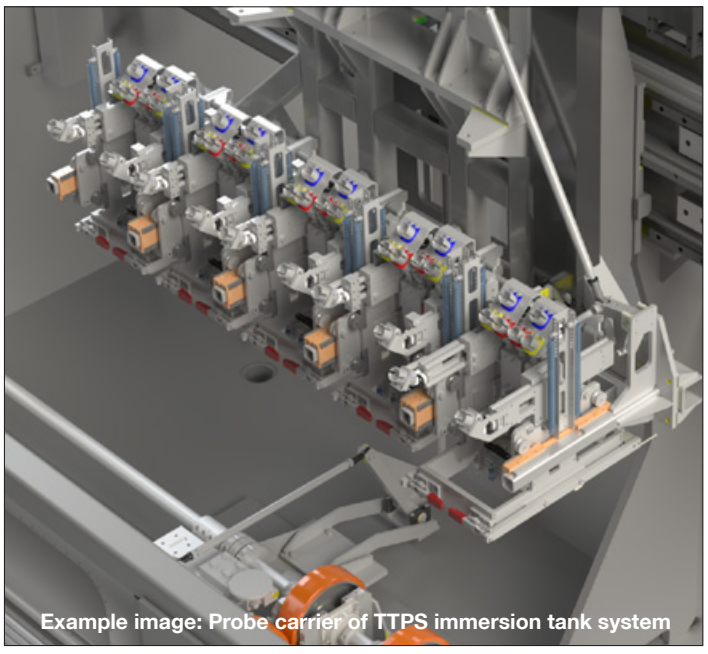
Example image: ECHOGRAPH TTPS immersion tank system

The contracts cover two ECHOGRAPH TTPS ultrasonic immersion tank systems, each equipped with our in-house advanced testing electronics, the ECHOGRAPH 1170 Industrial. The results are analysed using our powerful data management and operating software, ECHOVIEW, which is customised to suit the specific inspection task. A high-resolution C-scan display enables detailed visualisation of all inspection results.



Example of results displayed as a C-image of a TTPS immersion tank system using ECHOVIEW

The system inspects bars made of various titanium alloys for demanding applications in the aerospace industry, which place the highest requirements on material quality and inspection precision. It is required to reliably detect internal defects and surface cracks during multi-zone testing in accordance with standards such as AMS2628C on workpieces with diameters ranging from 100 to 600 mm and lengths of up to five metres. The technical core of the system is a high-performance tank over twelve metres long with two separate integrated inspection zones, equipped with three and six rotating roller stations respectively for reference and production bars. The ability to switch quickly between inspecting production material and verifying settings on the reference material is a fundamental requirement of the system. Further features of the ECHOGRAPH TTPS immersion tank system include high flexibility and inspection speed, as well as the high reproducibility required by various titanium standards for both unguided and guided inspection. Furthermore, simplified adjustment of the individual probes for multi-zone testing has been implemented. Development, manufacture and integration take place entirely in Germany.



Example image: Probe carrier of TTPS immersion tank system

These projects are examples of our commitment to precision, system depth and technological excellence in safety-critical industries. **GJ/BJ**

www.karldeutsch.de » Product Portfolio » Ultrasonic Testing Systems » Immersion Tank Technique (TTPS)

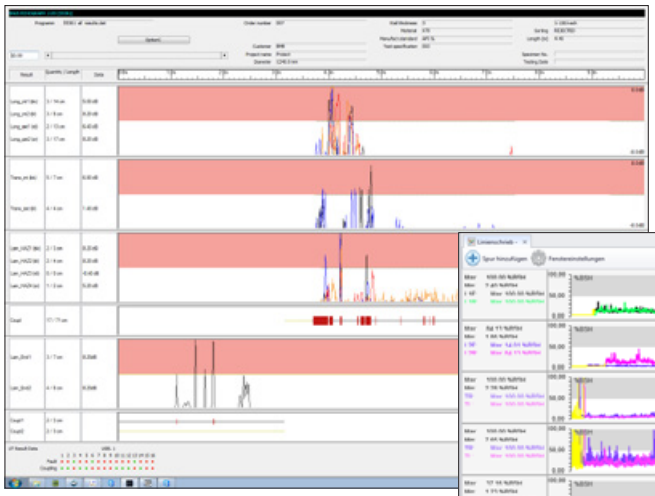
System-Based Revamping: Intelligently Modernising Ultrasonic Testing Systems

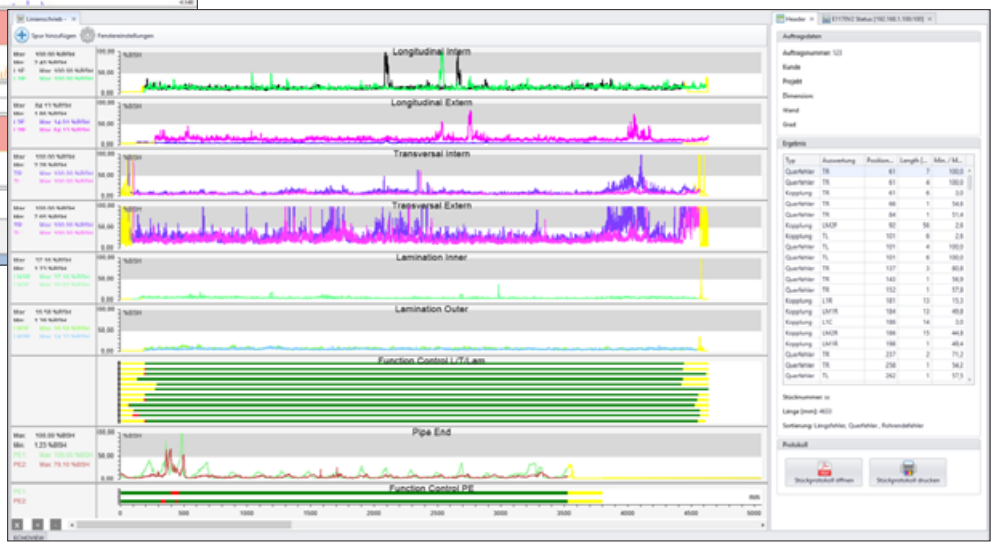
Ultrasonic testing systems have been performing reliably on production lines around the world for many years. At the same time, the demands placed on products – and consequently on testing technology – are constantly increasing. New standards, higher inspection sensitivity, increasingly fully automated production settings, and larger volumes of data for defect analysis call for modern technology and high-performance inspection systems. In many cases, however, it is not necessary to replace the entire system. Targeted modernisation can be a technically and economically viable alternative.

ECHOGRAPH 1170 Industrial high-performance testing electronics for ultrasonic testing and system control: The electronics shown in the example image is equipped with 16 channels. It can be expanded modularly to accommodate up to 40 channels.

KARL DEUTSCH offers comprehensive revamping solutions for this purpose, both for its own systems and for those of other market players. The aim is to continue using existing mechanical structures and equip them with modern testing electronics. This ensures that current testing requirements and standards are reliably met, whilst significantly reducing investment costs and downtime. At the same time, it makes an important contribution to sustainability, as existing system components continue to be used in a meaningful way.

At the centre of many modernisation projects is our latest inspection electronics system, the ECHOGRAPH 1170. Whilst the ECHOGRAPH 1170 Basic variant represents a cost-effective solution for standard inspection tasks and clearly documents and visualises order data, quantities and inspection results, the ECHOGRAPH 1170 Industrial has been specifically developed for highly complex and fully automated inspection applications. In conjunction with our intuitive data management





Comparison of the results display on the ECHOGRAPH 1155 test electronics (top) and the modern ECHOGRAPH 1170 Industrial as a line chart using the ECHOVIEW software (right). With the ECHOGRAPH 1170 Industrial, job data, test results, line graphs and functions for generating the PDF test report are clearly displayed on a single screen.

and operating software, ECHOVIEW, it enables highly interlinked testing processes and precise control of sophisticated testing sequences.

The ECHOGRAPH 1170 Industrial is currently proving its exceptional capabilities in several projects involving the ultrasonic testing of spiral-welded pipes. In addition to a completely new automated testing system, KARL DEUTSCH is currently also implementing several revamping projects in which existing systems are being upgraded to a significantly higher technological standard by integrating the ECHOGRAPH 1170 Industrial. This involves the implementation of complex, interlinked testing sequences.

First, the pipe end is inspected for lamination on one side of the pipe, followed by an inspection of the spiral weld along the entire length of the pipe in accordance with current regulations, and finally an inspection of the second pipe end. All test results are compiled in a single test report and fully documented. ECHOVIEW handles the management of order data as well as central functions of the system control. Parameters such as pipe diameter, weld seam width or identification number are automatically transferred to the testing systems at the customer's request, enabling them to adapt automatically to different pipe dimensions.

In addition, other modern data management solutions and Level 2 interfaces for connecting to higher-level production systems can be easily integrated. Secure VPN access for the service team can also be established, naturally in compliance with all customer-specific security requirements. This makes it clear that modern ultrasonic testing does not necessarily have to start with a new system. Often, a smart technological upgrade is all that is needed to ensure that existing systems are efficient, cost-effective and sustainable, and able to meet the demands of both today and tomorrow. **GJ/BJ**

Example of the ECHOGRAPH SNUS probe holders with automatic seam tracking

Example system: ECHOGRAPH SNUS for ultrasonic testing of the weld, the pipe end and the heat-affected zone

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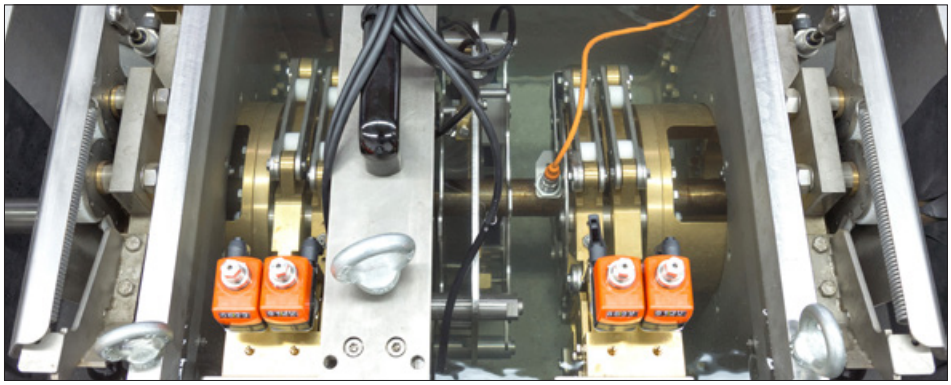
Product Portfolio »
Ultrasonic Testing Electronics
ECHOGRAPH 1170**

ECHOGRAPH HRPS-PAUT: Phased Array Probes for Bar Testing

When the highest testing requirements meet maximum dynamics, that's where the ECHOGRAPH HRPS-PAUT system comes in. Based on state-of-the-art phased array technology, this type of system has been specially developed for the high-dynamic and fully reproducible testing of bar materials of various diameters.

Examples of phased array probes for bar testing, manufactured with up to 128 elements in various radii of curvature and test frequencies



View into the water tank with inserts (cassettes) on which the probes are mounted in a ring around the bar (see the black cables). Additional waterproof guide triples are mounted in the test tank, which are adjusted to the bar diameter with the orange dial gauges and ensure precise, centric guidance of the bars.

The test material is passed through a water-filled test chamber at high speed in a linear motion. This sophisticated immersion technology concept not only guarantees ideal coupling conditions, but also reduces mechanical wear to a minimum. Probes and mechanics remain protected in the long term, even in continuous industrial operation. The phased array probes are integrated stationary in modular cassettes and positioned concentrically around the bar axis, each designed for varying diameter ranges. This arrangement, in combination with intelligently programmed cycle timing, ensures 100% testing of the entire bar cross-section. Even extremely short defects are reliably detected due to the high pulse density in the direction of transport.

Depending on the workpiece diameter, up to twelve phased array transducers are used. For bar diameters between 10 and 130 mm, two probe cassettes with four to six probes each are typically used. In the maximum configuration, this means up to twelve probes with 128 individual elements each – i.e. more than 1500 active test channels that must be controlled, evaluated and documented. Depending on the rod diameters to be tested, passive focusing with radii of curvature from 35 mm to 140 mm is possible. The test frequencies range from 4 MHz to 10 MHz with a typical pitch of 0.5 mm to 1.2 mm. Common connector types are Hypertronics, I-PEX and Tyco. KARL DEUTSCH has been manufacturing these highly complex sensors entirely in Wuppertal for many years. They are not only used in our own systems, but can also be used as probes for systems from other manufacturers.

ECHOGRAPH HRPS-PAUT bar testing system in our testing laboratory – ready for use at any time for customer-specific trials!

And of course, the system meets current regulatory requirements. Modern standards stipulate that a probe must be replaced as soon as several adjacent elements fail. The service life of the probes is significantly influenced by two factors: consistent maintenance and cleaning of the system, and the surface condition of the bars being tested.

The ECHOGRAPH HRPS-PAUT testing system therefore not only stands for technological performance, but also for a holistic testing concept that combines dynamics, precision and sustainability in industrial testing processes. **WD/SJ/GJ**

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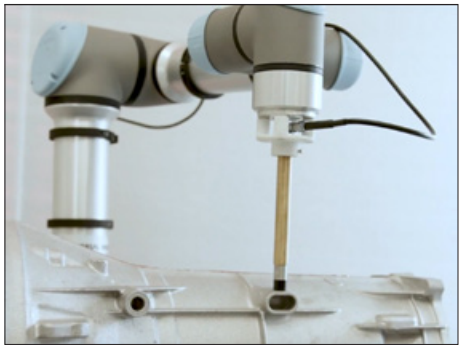
UT Probes**

Optimised Testing Processes through Adapted Delay Line Technologies

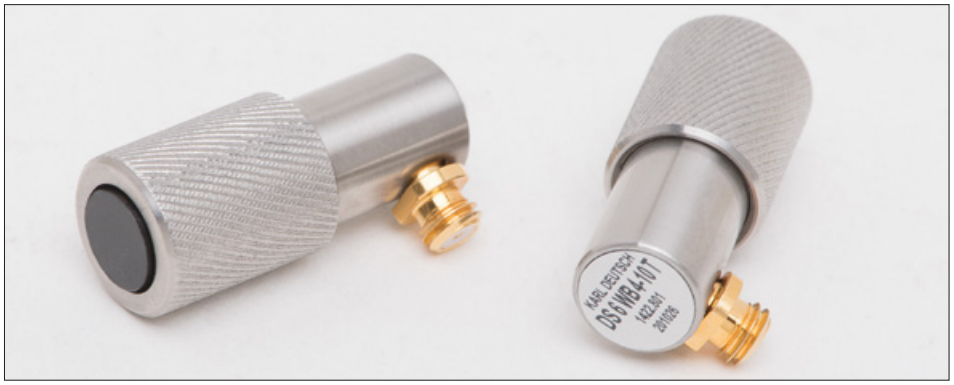
The quality of an ultrasonic examination is largely determined by the coupling of the probe to the component surface. Low-loss transmission of sound energy into the specimen is a basic prerequisite for reproducible and error-free test results.

While water is predominantly used as the coupling medium in fully automatic testing systems, thereby creating defined conditions, other constraints are more important in manual and semi-automatic ultrasonic testing. Specialised coupling media are available for common testing applications, ensuring reliable signal transfer between the probe and the workpiece. The coupling medium used has several functions: it compensates for microscopic surface roughness, displaces disruptive air and dust inclusions in the coupling gap and thus minimises reflection losses at the interface.



A robot arm guides the dry-coupled special probe during automated wall thickness measurement on a gearbox housing.

However, depending on the application, the additional application of a coupling medium is often considered disadvantageous in terms of process technology. In addition to the extra workload, cleaning requirements, contamination risks or cycle time specifications may also play a role. In certain industries – such as subsequent coating or joining processes – the use of coupling media is only permitted to a limited extent or is sometimes even prohibited. For such applications, probes with integrated, soft delay lines – such as the DS 6 WB 4-10 T – are used. These enable reliable coupling even without an additional coupling medium. Depending on the test scenario, delay lines are available in different geometries, degrees of hardness and materials. A rounded contact surface offers advantages on uneven or curved surfaces, for example: the air in the coupling gap can escape more easily, significantly reducing the time required to achieve optimum coupling. In practice, probes with interchangeable delay line distances for manual testing and special probes with fixed delay line in distances for automated testing systems have proven to be advantageous.



The probe DS 6 WB 4-10 T with integrated soft delay line

Manual inspection applications require a high degree of flexibility, as geometries, materials and inspection requirements often vary. Probes with interchangeable delay lines take this circumstance into account by enabling the delay lines to be replaced quickly and easily. However, due to its design, the modular structure requires a coupling medium between the delay line and the probe. This ensures acoustic transmission, but leads to additional handling effort and may require maintenance and cleaning work.

In contrast, special probes for automated testing systems are designed for maximum process stability and minimal maintenance requirements. The permanently integrated delay line forms a structural unit with the probe, eliminating the need for an additional coupling medium. This increases long-term stability and reduces potential sources of error in automated operation. The user cannot replace or adjust the delay line himself; this can only be done by the repair service. **SJ**

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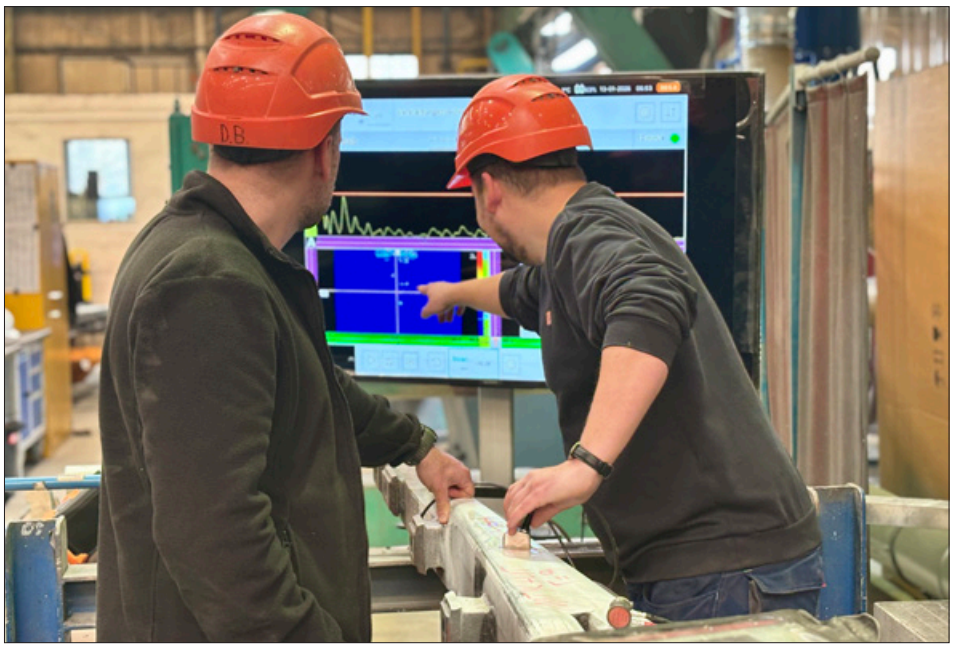
UT Probes

DB Witten: Modern Ultrasonic Testing Using TFM And PCI

Network availability does not begin on the track. It starts where components are manufactured, tested and approved. At the Oberbaustoffe Witten plant, this applies particularly to track switch frog points: all approvals must be technically reliable, reproducible and properly documented.

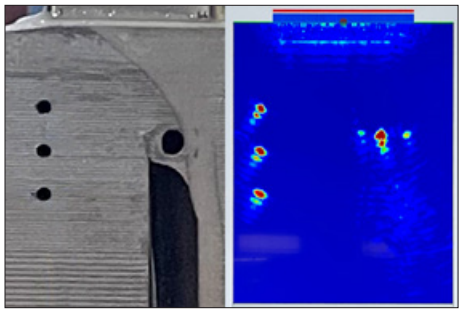


A modern test station, equipped with a TFM testing instrument and a probe from KARL DEUTSCH, built to the customer's specifications

The focus is on the Witten-type weld joint. Two component sections are precisely aligned and fixed in place using a connecting tube. The joint area is then completely filled with weld metal. This poses a challenge for non-destructive testing (NDT): transitions, local wall thicknesses and curved sound paths generate echo components that make a clear assessment difficult. The critical zone lies within the weld volume directly adjacent to the connecting tube. Right there is the area where fusion defects, crack-like indications and, above all, crack tips can form. These sections are often poorly oriented and, in conventional UT strategies, heavily dependent on the angle and the sound path. Detection is possible, but getting a clear result takes time – and, in cases of doubt, leads to re-inspections.

Cross-section of a Witten-type switch frog point – critical area around the tube; zone where cracks develop

Modern PAUT imaging addresses this issue by converting signals into meaningful information. TFM (Total Focusing Method) uses computational techniques to focus across the test volume. This delivers high resolution and stable image consistency, even with complex geometries. Results can be compared more quickly and justified with greater certainty during review. PCI (Plane Corrected Imaging) complements TFM in the geometry-critical area around the connecting tube. In practice, PCI often improves the separation between geometric echoes and relevant indicators. Particularly when dealing with crack-like indications, crack tips are often more clearly defined and easier to distinguish. This helps to make decisions more confident, reduces the need for rework and increases process reliability. The added value is evident in day-to-day operations: standardised setups reduce setup and calibration times, whilst clear criteria speed up decision-making. Presets launch the correct inspection sequence at the touch of a button, and documentation is generated automatically during the process. This ensures that testing remains efficient and reliable – in series production, across shifts and during audits. Under the leadership of Martin Wolf, the Oberbaustoffe Witten plant deliberately relies on German innovation. KARL DEUTSCH's application solution combines task definition, parameterisation and implementation into a seamless testing process – secure, efficient and audit-ready. **HOA**



Left: Cross-section of the switch frog point. Right: TFM image of this section – crack tips, transverse bores (TB) and Witten tubes are clearly visible.

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One Setup. One Process. One Result: A New Approach to Testing in the Petrochemical Industry.

Downtime is brief, inspection areas are extensive, and documentation must be audit-proof. This is precisely where a comprehensive inspection concept comes into play – one that ZfP Schreiber, as a specialist service provider, has established in practice in collaboration with KARL DEUTSCH: not individual devices, but a coordinated workflow – from data collection to a reliable report.

Efficient testing on the tank wall: NAVIC 2 with GEKKO in PAUT mode (130 mm/s)

When it comes to tank bottoms, coverage is key to achieving consistent quality. With Floormap X, large areas can be scanned quickly, systematically and with clear coding. Any anomalies can be precisely located, compared and documented in a way that allows for trend analysis in follow-up inspections – a clear advantage when it comes to reliably assessing corrosion and planning maintenance.

A modern approach to tank floor inspection: Floormap X

Mounted on the tank wall, the NAVIC 2 provides a stable, guided scanner base with clean encoder data and constant coupling. When combined with GEKKO and TFM/PWI, it delivers high-resolution imaging that significantly improves display characterisation and decision-making quality – particularly in the case of complex geometries and changing conditions on site. Circular welds on thin-walled connecting pipes require precision, consistent contact pressure and repeatable scan paths. The CIRC-IT scanner enables reliable circular weld inspections with minimal set-up effort – ideal for recurring inspection points and standardised programmes. Where coatings inhibit mechanical UT methods, PEC systems offer an efficient way to assess corrosion through the coating – without the need for extensive decoating. This reduces effort, increases safety and shortens downtime.

The result is setups that work in practice: greater comparability, fewer inefficiencies, and reliable reports. ZfP Schreiber has the necessary experience, testing expertise and operational know-how. As an equipment supplier, KARL DEUTSCH provides the complete application solution – from on-site consultancy and customised sensor technology, through systems and training, to service and calibration – all from a single source. For operators, this means: higher availability and faster, more confident decision-making. For other service providers: a scalable concept that can be standardised, retrained and rolled out cost-effectively. If you want to make your petrochemical testing more efficient and audit-proof, you'll find a practical approach here. **HOA**

Safety first: preparing for testing at the tank wall

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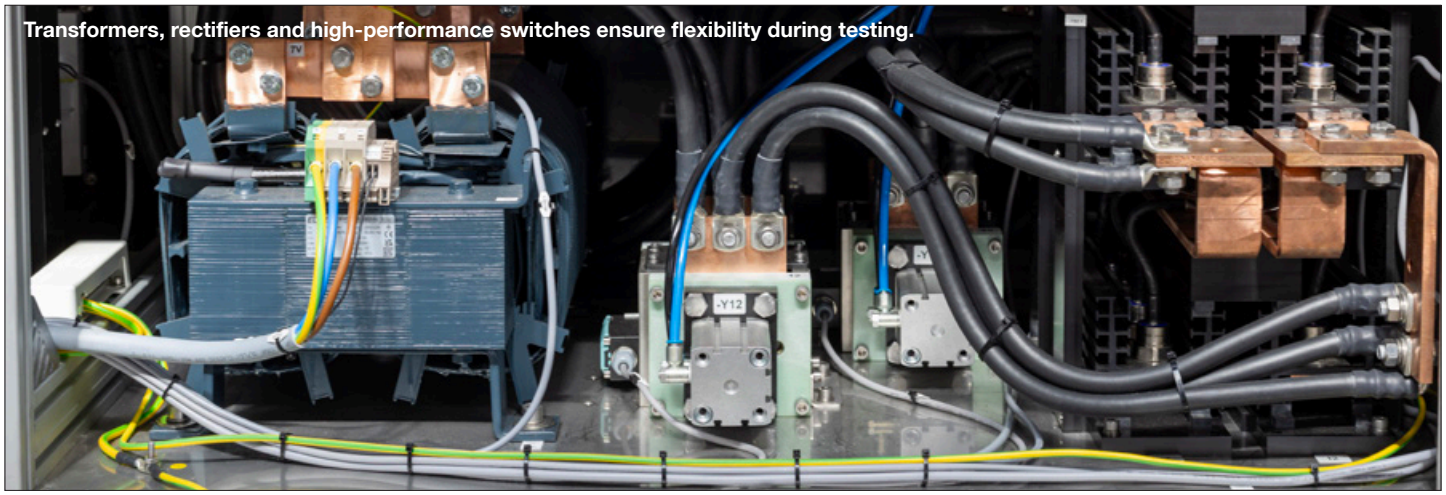
DEUTROFLUX UMT 1200 AC/DC: The Best of Two Worlds

DEUTROFLUX UMT 1200 AC/DC with MEMORY CONNECT control

In 2025, we had the privilege of producing a DEUTROFLUX UMT 1200 AC/DC magnetic particle crack detection machine for a renowned customer from the aviation sector. This involved the unique requirement that the machine had to be capable of complying with European testing standards (EN ISO 9934), American standards (ASTM E 1444 and E 709) and special in-house standards of aerospace manufacturers.

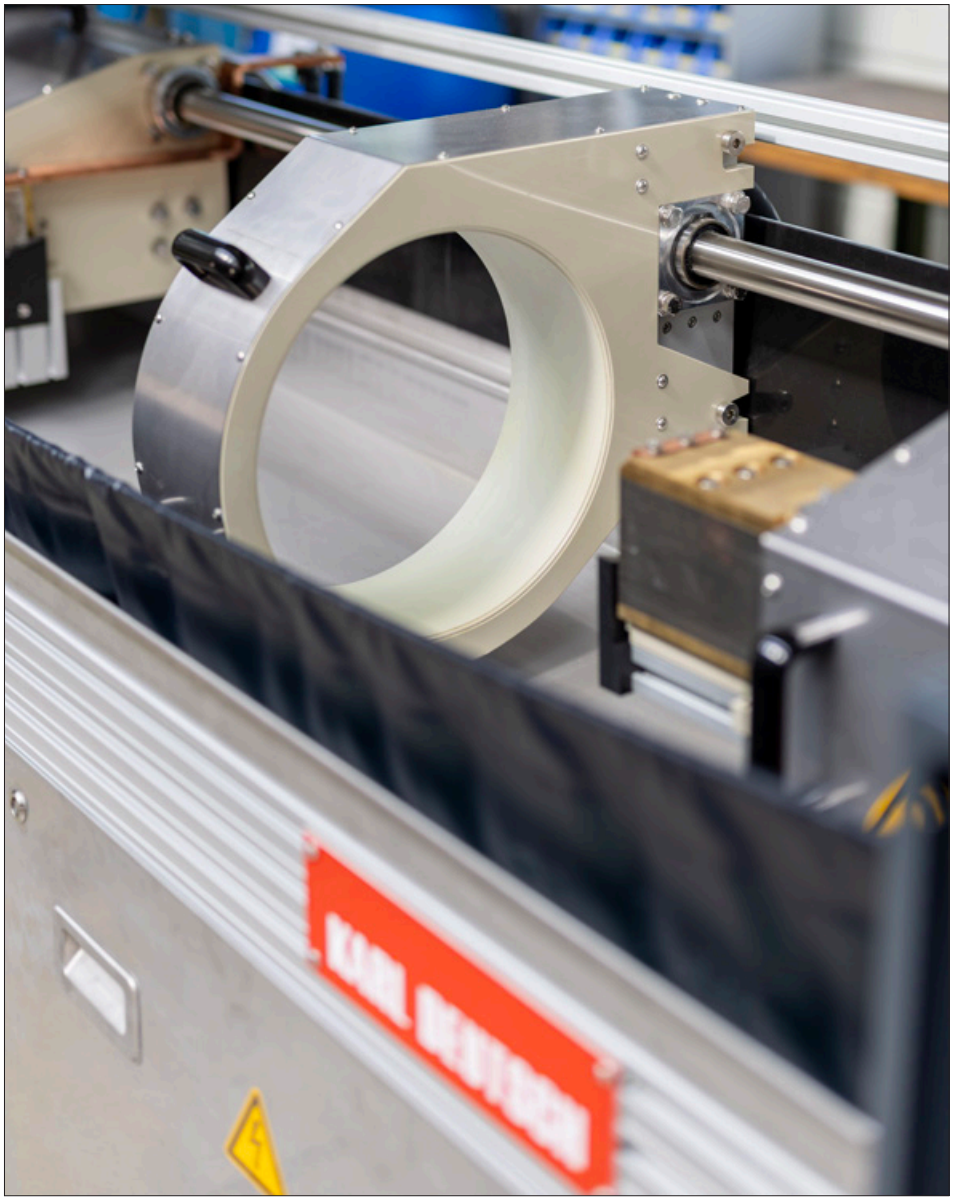
While in Europe testing is usually done on yoke machines using alternating fields and alternating current, in other parts of the world it is common to test for longitudinal and transverse cracks in two separate steps on machines without yokes, but with a manually movable coil. In this case, due to the greater penetration depth, testing with direct current and a direct field is often insisted upon in order to detect defects beneath the surface. Furthermore, it is generally expected that magnetisation will be briefly interrupted in both directions. In this context, field flow is referred to as coil shots and current flow as head shots. The number of shots required may also vary; in most regulatory frameworks, it is two.

Maximum flexibility of the machine was important to our customer in order to be able to meet as many of the client's audit requirements as possible with regard to the performance of the test. Therefore, the proven alternating field magnetization of the DEUTROFLUX UMT series has been supplemented with the necessary rectifier technology to generate full-wave direct current in the current flow. The maximum



Transformers, rectifiers and high-performance switches ensure flexibility during testing.

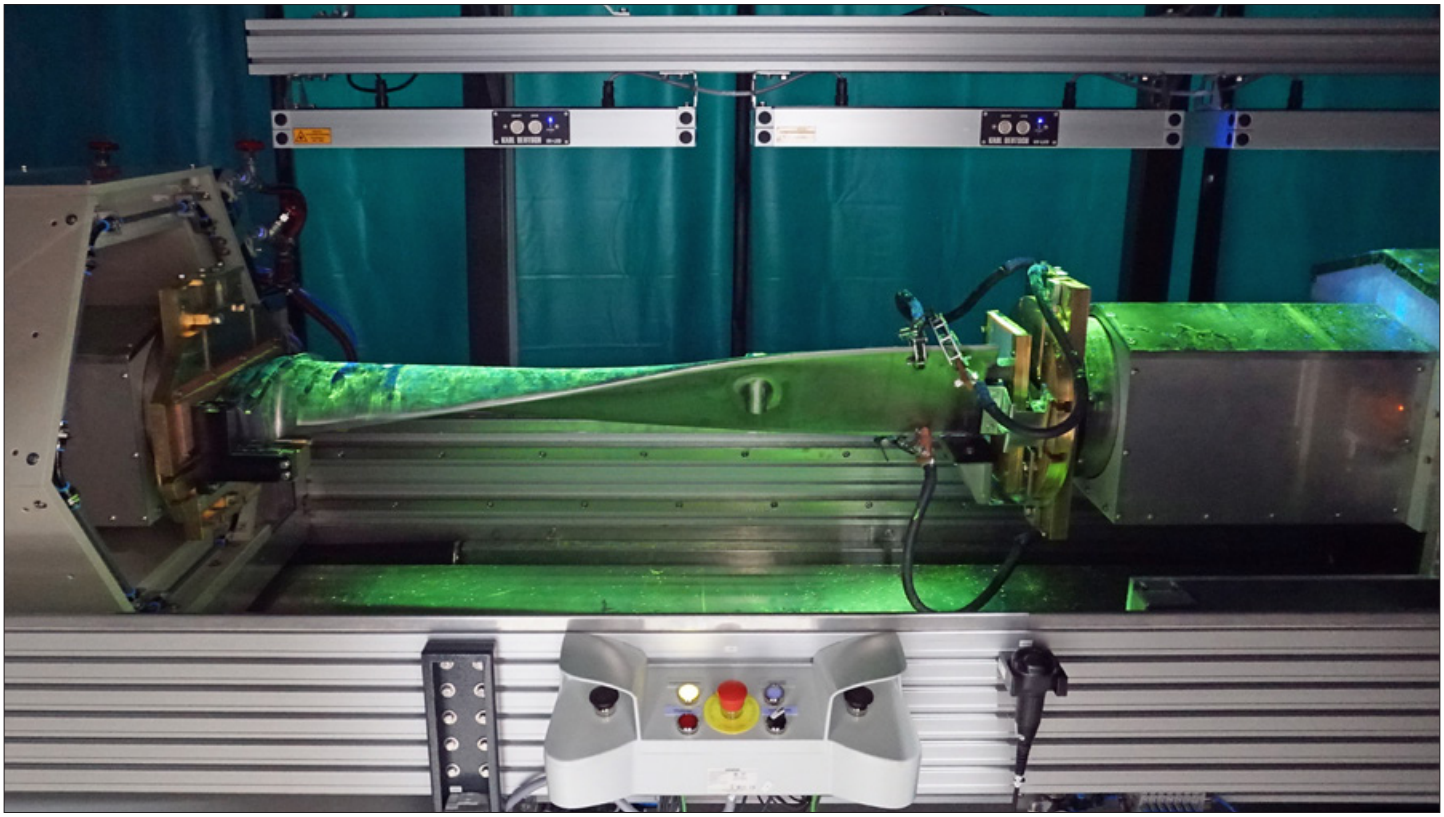
possible magnetisation power in the current flow was increased to 4000 A AC or 3000 A FWDC at the customer's request. In addition, an extra manually movable high-current coil was installed together with a transformer and a rectifier. Furthermore, two powerful electro-pneumatic switches ensure convenient switching between the two test modes, AC and FWDC. The extra coil made it possible to extend the usable test length to up to 1200 mm. The well-known DEUTROFLUX MEMORY CONNECT parameter module was used to enable convenient and clearly arranged operation of the machine's many options and to store the appropriate recipes for the desired test type for all components. The control panel was installed on a swivel arm at the customer's request. For inspection purposes, the LED large-area lamp in the ASTM version can be easily moved lengthwise on a lamp holder. Overall, our customer is delighted with the flexible options of the new machine, enabling him to meet all the requirements of his auditors who travel worldwide. **KS**



Additionally installed, manually adjustable and easily removable high-current coil for alternating current (AC) and full wave direct current (FWDC)

www.karldeutsch.de » Product Portfolio » Magnetic Particle Crack Detection » Systems » DEUTROFLUX UMT 350/600/900/1100

DEUTROFLUX UWS 2500 for MT Testing of Turbine Blades



KARL DEUTSCH was entrusted by a renowned manufacturer of turbines for energy generation to build a large DEUTROFLUX UWS 2500 machine for testing turbine blades using the magnetic particle method.

The components, which are up to 2 m long and weigh up to 500 kg, pose a number of challenges for mechanical engineering in order to ensure maximum practicability, high safety standards and short testing times. Since the test must be carried out with fluorescent magnetic particles in a darkened environment, a sufficiently large darkening cabin was constructed and equipped with a pneumatic roof opening for convenient crane loading. The three large-area UV-LED lamps required for the inspection are pneumatically moved backwards during the loading process.

The turbine blades are placed on specially designed, adjustable workpiece holders, that support them at their heavy base and at their blade-shaped tip. A combined test is carried out using a motor-driven moving coil and a test current of up to 6,000 A.

A special feature is the current feed technology at the tip of the components via special terminals to prevent burn marks caused by excessive current exposure on the narrowly tapering geometry.

The moving coil was enlarged to an inside dimension of 600 mm and constructed in a hexagonal shape so that it could be mounted on a narrow machine frame, thereby improving accessibility to the component. The coil also holds the rinsing unit for the magnetic particle suspension. Both directions of travel of the coil are possible for testing. In order to be able to inspect the heavy components efficiently from all sides, a motorised rotation of the components is installed on the machine by means of lathe faceplates on both sides. The machine is controlled via the MEMORY CONNECT module, which also provides comprehensive storage of test parameters and output of test results.

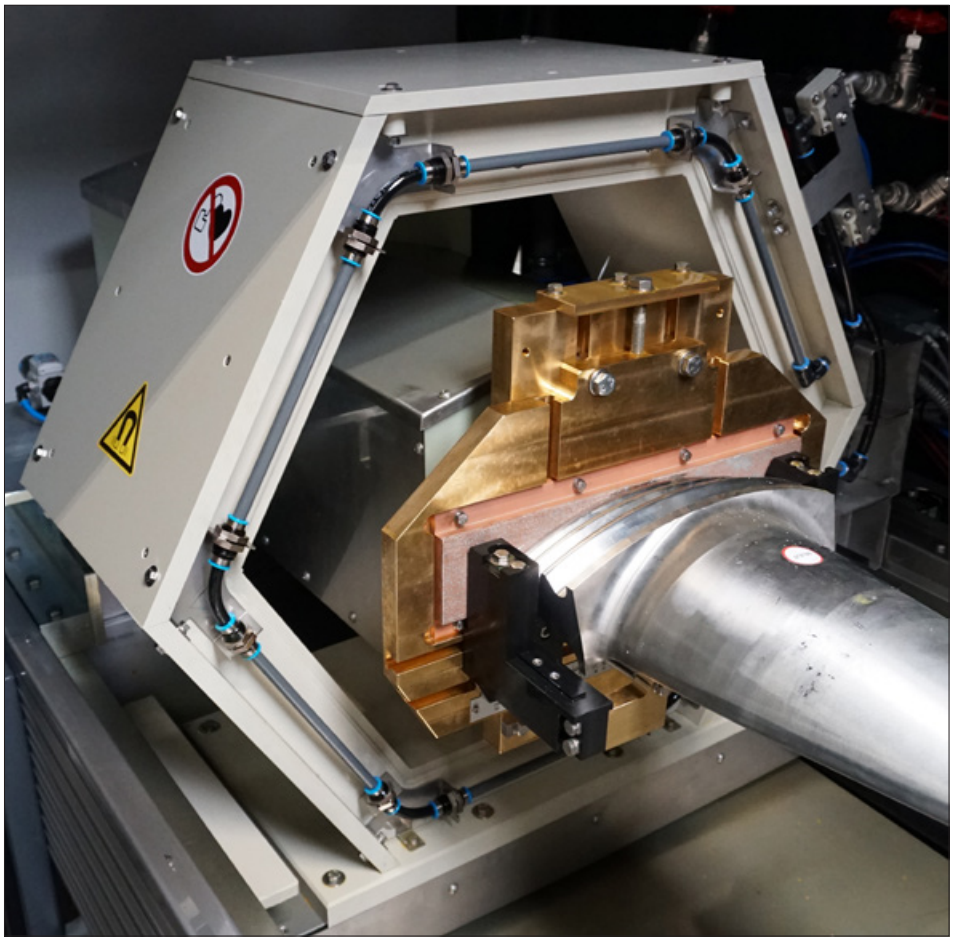
Since the turbine blades are tested in a finished state, the test is carried out using an oil-based magnetic particle suspension. Various safety measures have been taken to minimise the theoretical risk of fire or deflagration of an oil/air mixture caused by electrical sparks or heat generation from high currents, which is always present during oil testings.

In addition to the roof ventilation of the darkening cabin, an additional exhaust system within the machine tray ensures sufficient ventilation. To prevent sparking in the machine, the control system always checks first with a low current whether the component is properly connected before activating the required high testing currents.

The fire hazard increases with rising temperatures in the circuit of testing agents. One of the heat sources is the pump for the testing media, which operates continuously at full power for 24 hours in all standard MT systems, even though the pump power is only required during the active test cycle. In this system, however, the pump is controlled to a lower level of performance in standby mode. As a result, the pump generates hardly any heat, but still ensures sufficient circulation in the container.

Container for testing medium with sensor for monitoring of the test medium temperature

Since there are also other reasons for heat generation, e.g. a warm environment or warm parts being tested, the temperature in the container for test media is also monitored and the machine is automatically shut down for safety reasons if the temperature becomes too high. With these measures, our mechanical engineering contributes to our motto KARL DEUTSCH – DEFINITELY TESTED (FOR SAFETY) in both senses of the word. **KS**



The motor-driven, hexagonally-shaped movable coil with the rinsing unit

Pleased with the results after commissioning on site with Daniel Braun, Head of MT Devices and Systems at KARL DEUTSCH (second from right), and the customer's employees.

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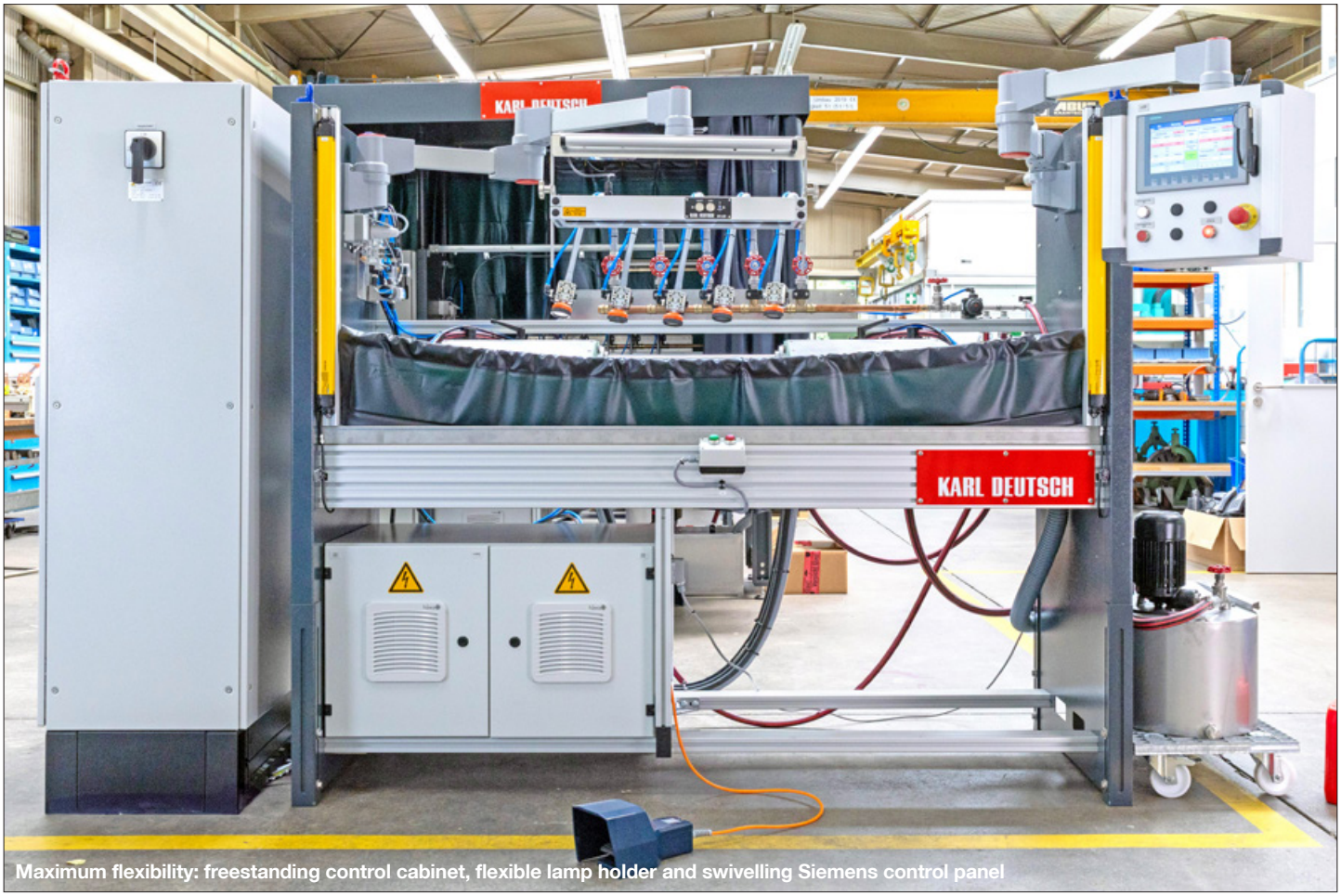
DEUTROMAT 4-Contact: A Slightly Different Type of Contact



Maximum flexibility: freestanding control cabinet, flexible lamp holder and swivelling Siemens control panel

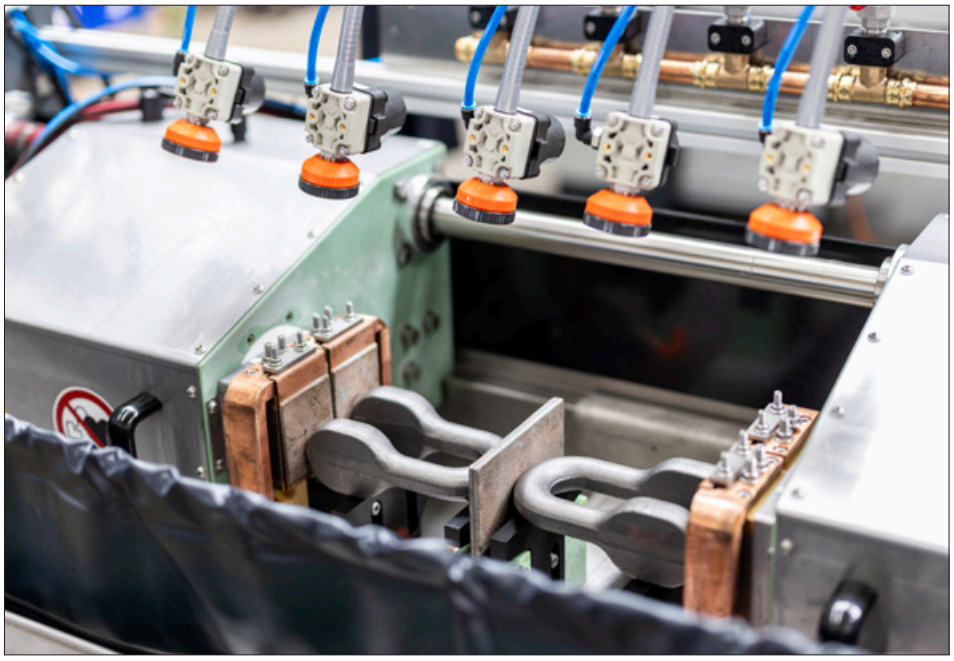
At KARL DEUTSCH, the DEUTROMAT series comprises specialised systems for magnetic particle crack detection. Based on the DEUTROFLUX UMT, now the DEUTROMAT 4K has been developed, featuring four separate magnetising contacts with independent stroke.

This universal test bench is suitable, for example, for manufacturers of slings. Its design makes it possible to test forged and cast components – including those with a forked shape or multiple contact points – in a reproducible manner and in accordance with standards. When using test benches with only two contacts, these components cannot be fully and

The familiar compact design as known from of the UMT series

uniformly flowed with current and magnetic field during a single magnetisation process, resulting in “V-gap area” at the furcations that are not sufficiently magnetised. The result of actual inhomogeneity in this area is that no indication is formed.

In addition to the ability to inspect these specific component shapes, the DEUTROMAT 4K features several other enhancements that improve inspection speed: for instance, the system includes an optional centre contact, which allows an additional contact point to be added in the middle of the clamping area. This enables the simultaneous inspection of two parts, effectively doubling the throughput. When this centre contact is split, up to four parts per test cycle are even possible for straight components. A further improvement is the light barrier in front of the actual test area, which protects the operator from the risk of pinching and simultaneously registers the change of test parts, so that the test process can start automatically once the operator’s hands have left the danger zone.



Using the centre contact doubles the throughput during component testing

Convenient: During setup, the control panel can be swivelled directly next to the test area without triggering the light barrier

Light barrier with three functions: Cycle start, prevention of pinching hazards and counting of test parts

In addition, the DEUTROMAT 4K is equipped with a flexible arm that allows the control panel to be positioned to suit the user’s individual needs. Together with the spray nozzles and the large-area UV-LED lamp, which are also swivelling and thus facilitate work in the clamping area, this design delivers noticeable improvements in the inspection process and ergonomics. **WM/HL/KS**

www.karldeutsch.de » Product Portfolio » Magnetic Particle Crack Detection » Systems » DEUTROMAT

New UV-LED Hand Lamp

KARL DEUTSCH and MR CHEMIE are both medium-sized family-owned companies operating internationally in the field of non-destructive material testing.

The two companies had already worked together successfully on the previous version of the UV-LED hand lamp. This cooperation has been continued with the new and improved UV-LED hand lamp.

Weighing only 650 grams, the new UV-LED hand lamp (including batteries) is even lighter than its predecessor. Together with the ergonomically shaped handle, the lamp fits comfortably in the hand even during longer periods of use. The centrally located button allows for comfortable operation for both right- and left-handed users.

The new UV-LED handheld lamp is equipped with five high-performance UV-LEDs for optimum illumination of the test area. A standard built-in ASTM filter also improves crack visibility. The lamp has a white light LED for room orientation. A short push of the button switches between UV and white light. The hand lamp is powered by two high-performance Li-ion cells of type 21700. This extends the illumination time by up to 15 % compared to the previous model. The set includes two pairs of rechargeable batteries. The batteries can be replaced without tools using an easy-to-use bayonet quick-release fastener on the back of the lamp. As an alternative, the lamp can be powered by an optional plug-in power supply unit. To extend the battery life, there is an energy-saving mode that switches off the lamp as soon as it is placed on the high-quality aluminium head, which is protected by a rubber frame. An optional mounting ring accessory allows standard tripods to be used for optimised, stationary positioning. UV protective goggles are also available as an accessory and can be stored in a compartment in the case.

The hand lamp from KARL DEUTSCH is valued by our customers internationally.

Well-designed features, more lightweight, ergonomic, and meets all important standards

The lamp complies with all requirements of EN ISO 3059 and is classified in risk class 2 in accordance with information sheet EM 06 of the German Society for Non-Destructive Testing. A certificate of conformity with the standards ASTM E3022, Airbus AITM6-1001 and Rolls-Royce RRES 90061 can be issued on request. **Sib**

www.karldeutsch.de » Product Portfolio » UV-Lamps and Accessories » UV-LED Hand Lamp 3817.101

HAW Hamburg: Two New Training Places for PT Testing

Hamburg University of Applied Sciences (HAW Hamburg) is continuing to invest in its expertise in non-destructive testing (NDT) at the Faculty of Sustainable Engineering (NIW) in the Laboratory Centre for Materials Science and Welding Technology.

Two new training places at the Research and Transfer Centre for Intelligent Industrial Innovations (FTZ 3i) at HAW Hamburg

As one of the largest practice- and research-oriented universities in northern Germany, it is once again reinforcing the importance of non-destructive testing within applied science. We are delighted that the HAW has chosen two new training test stations for PT testing (penetrant testing) from KARL DEUTSCH. From now on, students on the Mechanical Engineering degree programmes – particularly those on the modules in Materials Science, Materials Testing, Joining Technology and Additive Manufacturing – will be able to familiarise themselves with penetrant testing and gain valuable practical experience. On December 11th, 2025, Prof. Sheikhi and Mr. Gobbert emphasised the importance of NDT in teaching and research, as well as the need to qualify future graduates for professional life in line with the latest state of the art. **HL**

Automated PT Testing with Image Analysis and Component Handling

For many years, KARL DEUTSCH has been developing and manufacturing test benches and automated systems for PT testing. The range extends from smaller units for training purposes, through test benches for laboratories and in-process testing, to semi- and fully-automated systems featuring complex water treatment and pre-cleaning stages.

Following the successful introduction of the CRACKVIEW AI system, developed by KARL DEUTSCH, in the field of magnetic particle testing, a module for PT testing is currently being tested and promising results have already been achieved in terms of analysis and evaluation.

In addition to supporting inspectors in the evaluation of indications and automating processes for very high volumes, the issues of parts handling and time savings for smaller volumes are also becoming increasingly important. We are currently working on the development of automated test cells to offer customers with lower throughput potential for cost savings and enhanced testing reliability.

Following the remodelling of Works 1, our new technical centre now offers a wide range of options for visualising and testing automated evaluation and parts handling. We look forward to receiving your testing requirements so that we can develop a solution tailored to your needs. **RB/BC**


Robot-based component handling during PT testing

www.karldeutsch.de » Product Portfolio » Penetrant Testing » Testing Stations and Systems

Reliable Testing Results with the KD-CHECK PREW-S and KD-CHECK PREW-AS Cleaners

Clean surfaces are essential for precise inspection processes and high-quality further processing. With KD-CHECK PREW-S and KD-CHECK PREW-AS, you have access to two high-performance, water-based pre- and post-cleaning agents that have been specially developed for industrial applications and enable the reliable cleaning of a wide variety of materials.

KD-CHECK PREW-S – The aluminium specialist

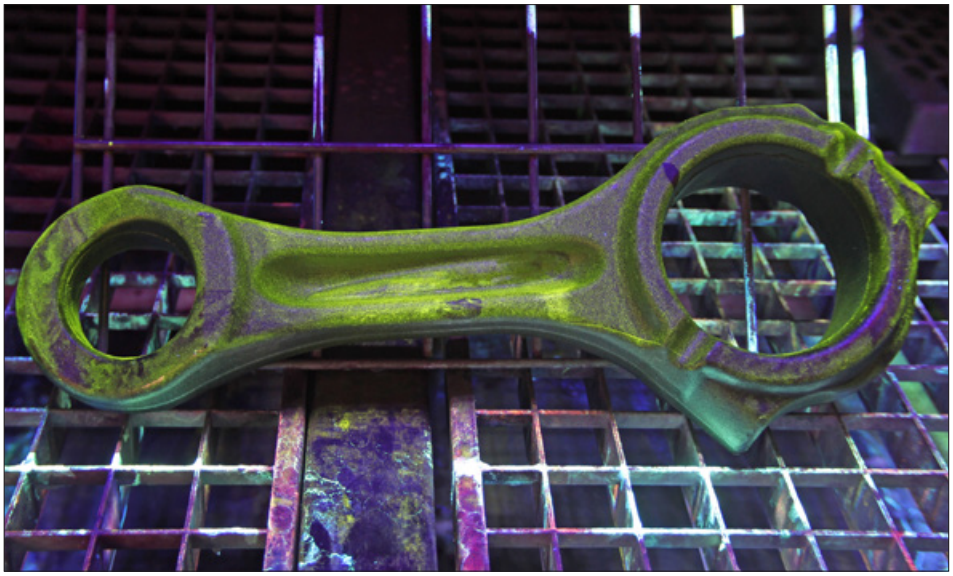
KD-CHECK PREW-S is an acidic cleaner specially developed for cleaning aluminium components. On aluminium surfaces in particular, contaminants such as release agents and production residues must be reliably removed in order to provide optimum conditions for subsequent processes.

Thanks to its specially formulated composition, KD-CHECK PREW-S effectively dissolves such residues and ensures a clean, even surface. This makes it ideal for use as a pre- or post-cleaner in quality assurance and surface inspection.

KD-CHECK PREW-AS – Powerful cleaning for steel and stainless steel

KD-CHECK PREW-AS is an alkaline cleaner specially designed for steel and stainless steel. It reliably removes oils, greases, production residues and other contaminants from metal surfaces.

Its powerful action ensures thorough cleaning and creates ideal conditions for inspection processes or further processing steps.



Uncleaned connecting rod with magnetic powder residue

Connecting rod cleaned with KD-CHECK PREW-AS

Versatile in use

Both cleaners offer impressive versatility and can be easily integrated into existing processes. They can be used as:

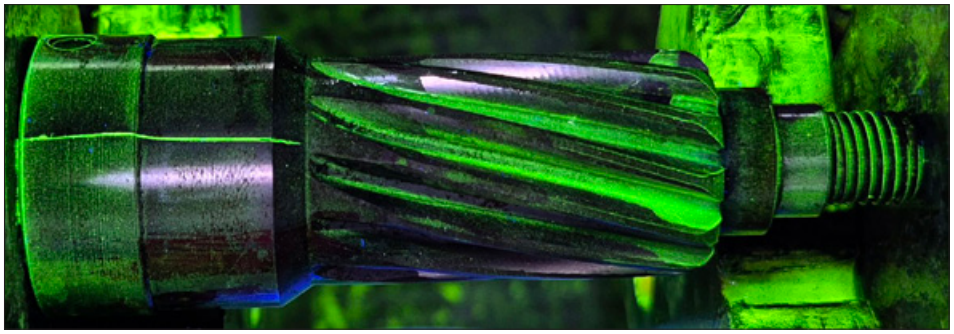
- **Immersion application** in cleaning baths
- **Spray application** for cleaning large areas or automated cleaning
- **Manual cleaning** for specific applications

As such, KD-CHECK PREW-S and KD-CHECK PREW-AS offer a versatile solution for a wide range of industrial requirements. **GZ**

www.karldeutsch.de » Product Portfolio » Chemical Products » Penetrant Testing » Developer and Cleaner

FLUXA 140 G – Precision in Non-Destructive Testing

In the world of non-destructive material testing, every detail counts. With FLUXA 140 G, you can rely on a fluorescent magnetic particle crack detection agent that meets the highest standards and takes your inspections to a new level.



Fluorescent indication using the crack detection medium FLUXA 140 G

Outstanding magnetisability:
FLUXA 140 G is characterised by its excellent magnetisability. The carefully formulated powder reacts reliably to magnetic fields and ensures that even the smallest cracks and material defects become visible. This gives you precise results you can rely on.

Low background fluorescence:
Thanks to its optimised composition, FLUXA 140 G impresses with low background fluorescence. This means that your test areas appear brilliant and high-contrast, while unwanted background fluorescence is minimised. Your inspections will therefore be faster, clearer and more efficient.

Excellent distinctiveness:
The dark green powder of FLUXA 140 G stands out clearly from rust or other surface contaminants. This enables clear visual separation, reduces misinterpretations and increases the safety of your processes. **GZ**

www.karldeutsch.de » Product Portfolio » Chemical Products » Magnetcf Particle Testing » Fluorescent » FLUXA 140 G

KARL DEUTSCH Kart Race

Our team from the department of systems engineering had been wanting to go karting together for a long time, and recently the time had finally come: 20 racers competed for victory on the nearby karting track. Afterwards, Wolfram Deutsch invited them to join him for dinner. **KR**

3rd Expert Conference on Digitalisation and AI in NDT in Wuppertal

This year, the Expert Conference on Digitalisation and AI in NDT took place from 28 to 30 January 2026 in our beautiful city of Wuppertal.

The event kicked off on Wednesday evening with a relaxed get-together at “Cafe du Congo” in Wuppertal’s “Luisenviertel” nightlife district. The bar was packed to the rafters and the evening was very laid-back.

Thursday was dominated by highly interesting presentations. As residents of Wuppertal, we were very proud of the venue: the Historische Stadthalle in Wuppertal!

Of course, KARL DEUTSCH was also there with speaker presentations: Mr. Alexander Hoheisel on the topic of “ZfP 4.0: Intelligente Ultraschallprüfung – Schlüsseltechnologien, Prüfstrategien und KI-Assistenz in der Industrie” (NDT 4.0: Intelligent ultrasonic testing – key technologies, testing strategies and AI assistance in industry) and Mr. Matthias Spormann on the topic of “Automatisierung und KI für den ZfP-Sondermaschinenbau” (Automation and AI for special machine construction in NDT).

At around noon, the nearly 100 participants visited us for a tour of the factory. The KARL DEUTSCH team presented UT, MT and PT systems currently in production, as well as our probes, handheld instruments and chemical testing agents. Of course, the focus was also on the demonstration of CRACKVIEW – our own AI for supporting testing tasks. The evening came to a close first at the Rossini Restaurant in Wuppertal’s Historische Stadthalle and later at the “Open Ground” club. This club is currently the talked-about topic throughout Europe, as it is said to have the best sound. On Friday, there was a second series of lectures before everyone began their journey home.

Venue Historische Stadthalle Wuppertal

Holger Haßdenteufel from VECTOR Technische Unternehmensberatung (TUB) GmbH and his team have put together a thoroughly successful event. A big thank you to the organising team and everyone who brought this symposium to life. **KR**
Photos: Steffi Atze / Atelier Urmel

Get-together at Café du Congo on the eve of the conference

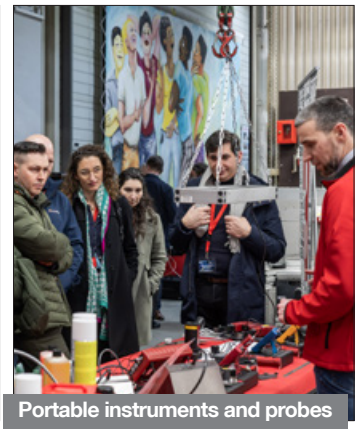
Dr. Wolfram Deutsch welcomes the participants to his home town.

Conference start

Dr. Wolfram Deutsch and Holger Haßdenteufel (VECTOR Training)

Jörn Bolten presenting the latest UT systems

Stefan Klein explains CRACKVIEW

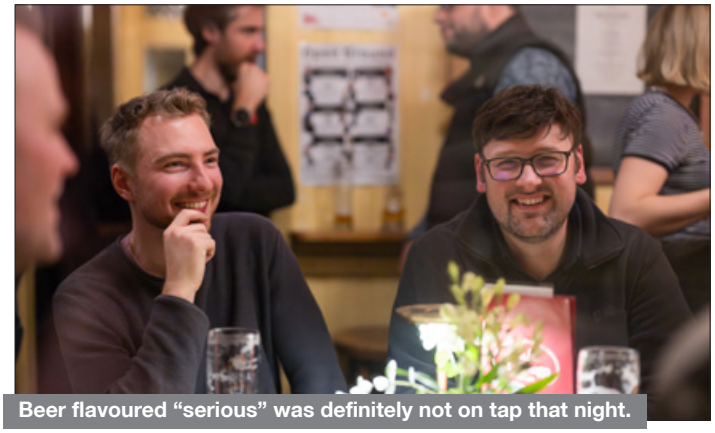


Portable instruments and probes

Enjoyable exchange on the sidelines of the factory tour

Daniel Braun presented our innovative MT systems to the guests.

Dr. Oliver Goerz: Chemical testing media and PT systems



Beer flavoured “serious” was definitely not on tap that night.

Extension of Works 1 in Wuppertal

Following our positive growth both at home and abroad, we are expanding Works 1 at our headquarters in Wuppertal.

Once the renovation is complete, the departents of administration, sales, marketing, probe development and manufacturing, chemical testing media production and the manufacturing of our mobile testing equipment will have significantly more space and modern workplaces at their disposal. This is an extremely important step for KARL DEUTSCH in being well positioned for the coming years, and sends a strong signal regarding our headquarters in Wuppertal. A highlight of the remodelling phase was the topping-out ceremony: on December 18th, 2025, in bright sunshine, the current progress of the construction work was inspected and celebrated with the entire staff, the construction company's team and friends of KARL DEUTSCH. **KR**

The topping-out ceremony video also features archive footage from 1967, when the building was originally constructed.

www.youtube.com/watch?v=ETGPY1fbmTs

In addition, there is a time-lapse video that impressively shows the renovation work carried out so far.

www.youtube.com/watch?v=0vflo44aOEUs

Internship of Generation 4

Philipp Deutsch (born in 2003) is the second oldest child of Cornelia and Wolfram Deutsch. After completing his secondary education, he decided to train as an automotive salesperson at the PROCAR car dealership chain, followed by an internship at KARL DEUTSCH from February to July 2025.

The aim was to gain initial experience in the family business and, in particular, to become more familiar with sales. The internship covered the entire spectrum of the company – from soldering in the production of portable instruments and probes to learning about current projects and accompanying the field service to customers and events, everything was included. He has particularly fond memories of visiting the CONTROL International Trade Fair in Stuttgart with his father and the KD sales team.

In preparation for his future role at KARL DEUTSCH, Philipp now plans to continue his training and internship in sales and will therefore begin studying International Business at Maastricht University.

His older brother Julius (born in 2001), who has already completed his bachelor's degree in business administration and will soon be finishing his master's degree in Sweden, also plans to join the company. His younger sister Theresa (born in 2007) is also currently doing an internship at KARL DEUTSCH ahead of starting her studies. Elisa (born in 2005) does not rule out joining the family business at a later date, but is focusing on other commitments for the time being.

The KARL DEUTSCH team at CONTROL 2025 in Stuttgart: Florian Zeman, Dr. Kirill Zilberberg, Dr. Wolfram Deutsch, Stefan Kierspel, Philipp Deutsch, Titus Peltsch, Dr. Andreas Meißner, Reinhold Engels and Stefan Klein (from left to right)

Dr. Wolfram Deutsch (born in 1967) and his experienced management team are available for the long term to ensure an orderly transition. To mark the end of the internships, a mutual expression of thanks: from us to Philipp and Theresa for their work, and from them to the employees for their warm welcome! **WM**

Dres. Cornelia and Wolfram Deutsch with Julius, Theresa, Philipp and Elisa (f. l. t. r.).

Visiting Delegation from China with the VDHC

The visit of the Hidden Champions to KARL DEUTSCH in Wuppertal was a real-life opportunity for the entrepreneurs in this large delegation from China.

The VDHC e.V. (Association of Hidden Champions) is an interest group and membership association of medium-sized hidden champion companies operating internationally from Germany. As a member of the association, KARL DEUTSCH was very pleased when Georg Türk, Managing Director of the VDHC, asked us if he could once again visit us with an international delegation for a factory tour.

We recently had the great honour and pleasure of welcoming a 34-member delegation from various Chinese provinces to Wuppertal. The delegation was led by Mr. Cao Xiuyun, Chairman of the Chinese management network Kazuo Inamori (Beijing) Management Consulting Co., Ltd. This was founded in 2010 as an initiative of Kazuo Inamori and now connects over 37,000 entrepreneurs throughout China. Kazuo Inamori is the founder of the leading Global 500 companies Kyocera and

Intercultural exchange is characterised by an open and welcoming attitude and mutual respect.

Always inspiring: Great interest arises when different perspectives, experiences and cultures come together.

Dr. Wolfram Deutsch, Cao Xiuyun (Chairman of the Chinese management network Kazuo Inamori (Beijing) Management Consulting Co., Ltd), Georg Türk (Managing Director of VDHC e.V.) f.l.t.r.

Encounters between different continents demonstrate the value of genuine dialogue.

KDDI. The visit to KARL DEUTSCH was the “real-life conclusion” for the entrepreneurs. Previously, they had already attended a lecture on “Brand and Design” given by a branding agency. Numerous current examples were used to illustrate how beneficial the professional interplay between “brand and design” is for the success of international companies. Another presentation on the success of hidden champions provided the delegation with many inspiring tips for their own companies. The hidden champions theory is very well known in China, and the number of so-called “Little Giants” in China is growing steadily!

For 77 years now, the family-owned company KARL DEUTSCH has specialised in non-destructive material testing. Our third-generation managing partner, Dr. Wolfram Deutsch, presented the successful and captivating history of his company to the interested group. This was followed by practical demonstrations during a factory tour. One participant immediately wanted to purchase a testing device for his company in the automotive sector. Fortunately, KARL DEUTSCH also has a subsidiary in China! **WD**

KARL DEUTSCH in the Mountain Bike Bundesliga

KARL DEUTSCH supports local projects, artists and athletes. Since this year, we have been supporting the "Next Evolution Racing Team", which is mainly active in the Mountain Bike Bundesliga and the 3-Nations Cup.

In these races, top national and international riders compete for places in the general classification and points for the world rankings. Around ten races are held each year. The team includes Benjamin Muth (23), Nicolas Kaiser (23) and Jacob Stricker (23). All three have been competing in mountain bike races for over ten years. Outside of sport, they study sports science, architecture and mechanical engineering. This year's season began in March. As the team was newly formed this year, the goal for the season is to establish themselves and collect important points. If you would like to experience mountain bike racing in person and cheer on the NEVORA team, you can find all the information you need at www.nevoracing.de. **KR**

Next Evolution Racingteam: Benjamin Muth (23), Jacob Stricker (23) und Nicolas Kaiser (23)

Benjamin Muth at the World Cup in Quebec, Canada

The newly established NEVORA team and its three riders are primarily competing in the 3-Nations Cup and the Mountain Bike Bundesliga.

KARL DEUTSCH in South America

In Peru, Dr. Kirill Zilberberg (KARL DEUTSCH) travelled together with José Luis Zúñiga Fajardo (JLZ LOGISTICA) and then with Robson Gomes (ATF Soluções) to visit customers in Brazil.

KARL DEUTSCH is represented worldwide, and this is only possible with the help of dedicated employees who work in our international field service and with strong local partners.

Our colleague Dr. Kirill Zilberberg recently visited the South American continent. There, he first visited leading materials research institutes and companies operating in the Peruvian mining industry with José Luis Zúñiga Fajardo from our long-standing partner JLZ LOGISTICA. Our reliable portables, chemical testing media and special solutions from our systems engineering division, along with worldwide support, received a great deal of interest there. The journey then continued to Brazil. There, Dr. Kirill Zilberberg, together with Robson Gomes from our partner ATF Soluções, visited manufacturers of automotive parts, tubes and bars to present them with turnkey UT and MT testing systems with a high degree of automation for large quantities. We are happy that we can pass on our expertise in the field of non-destructive testing on such trips and thus support our customers with reliable, cost-effective and time-saving solutions. Many thanks also to our local partners on site! We look forward to our next trip or your visit to us in Wuppertal! **KR**

Events and Trade Fairs

11 – 13 May 2026
DGZfP Annual Meeting 2026
Eurogress Aachen
Monheimsallee 48, 52062 Aachen
Germany
Stand 27

19 – 21 May 2026
COFREND DAYS
Lyon Congress Center
50 quai Charles de Gaulle, 69006 Lyon
France

15 – 19 June 2026
14th ECNDT 2026
European Conference on Non-Destructive Testing
Veronafiere Conference Centre
Viale del Lavoro 8, 37135 Verona
Italy

01 – 02 October 2026
KARL DEUTSCH "Summit" 2026
77th Anniversary KARL DEUTSCH, Lectures, Inauguration Works 1 and Oktoberfest-Party
KARL DEUTSCH
Otto-Hausmann-Ring 101, 42115 Wuppertal
Germany
Registration under
https://www.karldeutsch.de/registration-summit-2026/?lang=en
or via the opposite QR code

12 – 15 October 2026
testXpo 2026
International Expo for Materials Testing
ZwickRoell GmbH & Co. KG
August-Nagel-Str. 11, 89079 Ulm
Germany

More information on lectures, trade fairs, conferences can be found on our homepage:
www.karldeutsch.de » News & Dates » Dates