

DB User Authorization

Along the rails with orange lights

On March 14, 2011, we received user authorization for the WPG-D340 draisine from the German national railway Deutsche Bahn. The WPG D340 is therefore the official testing equipment of DB for detecting head check defects on rails in tracks and switch points.

The use of ultra-lightweight carbon fiber reinforced plastic means that the total weight of the system is just a few kilos, making it a one-man testing system. Its patented magnetic guiding as well as the new calibration standard form the basis for reliable testing.

Maneuverability on switch points was improved again, as was the wear resistance of the probes.

A „live use“ video can be found on YouTube for those who are interested.

The „EloRail“ testing and evaluation software can record measurement data according to precise positions. New features include a statistical evaluation of the data obtained and its resulting zero correction during the testing.

The report was also reworked as a result of a test in which all of the defects are classified and all inserted comments are displayed.

With the use of signal colors and reflective film, the WPG D340 is a highlight even at night.



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Products

ELOTEST IS500 with sorting switch



The new inline device ELOTEST IS500 was presented to the public for the first time at the CONTROL 2011 trade fair in Stuttgart. It was completely redesigned inside and out as the successor to our ELOTEST IS device. This new device is also characterized by digital implementation. The device can be used purely for crack detection or multi-frequency sorting or in combination.

The performance of the device was able to be tested in two typical industrial applications. The sorting tasks were solved very well using the bubble gates so that the pseudo rejections were reduced to a minimum. Sorting tasks were presented with a sorting switch from N-DECT. This young company was able to draw great attention to itself through the development of a multi-part sorting switch.

Overall, this year's CONTROL 2011 was a great success. Many professional visitors took advantage of the opportunity to discuss their specific testing tasks directly at the trade fair booth.

A BRIEF INTRODUCTION...



N-DECT GmbH is headquartered in Pretzfeld in the Franconian region of Bavaria. It was founded at the beginning of the year with the ideas and experiences gained from over 10 years building special machinery for nondestructive material testing.

In collaboration with Rohmann GmbH we were able to present our newest idea of a multi-part sorting switch (8 states demonstrated) at the CONTROL 2011 trade fair.

This sorting switch involves a concept that permits as many states as the user wishes, monitoring of all sorting positions, as well as control of the separation.

Gentle yet rapid processing of the parts is the focus of the development.

Our scope of delivery and service encompasses:

- Special machine construction for nondestructive material testing
- Manual, semi-automated, and fully automated test systems
- Infeed and outfeed for parts
- Sorting devices with integrated control and monitoring
- Consultation regarding the subject of eddy current testing
- Service and optimization of existing test equipment

Visit us at www.n-dect.de.

Application –

Crack detection on crankcase liners

Testing task:

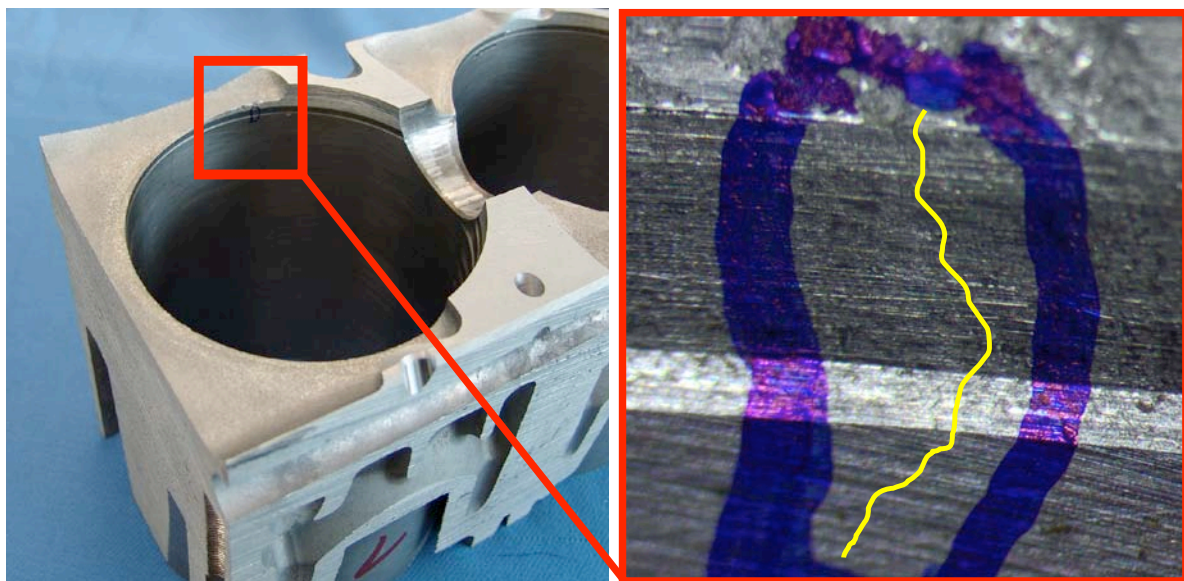
The testing task consisted of the inspection of cast liners that were embedded in an aluminum crankcase. The liner was tested for cracks that formed either during the casting process of the liner itself or later when molding it into the crankcase. Individual cracks were proven to exist primarily on the edges of the liner using magnetic particle testing. The task now consisted of the implementation of the test as 100% testing during production flow.

A ventilation borehole that ran through the entire wide diameter of the liner made the testing more difficult. This interference contour had to be hidden in the system in order to be able to test the lower edge of the liner.

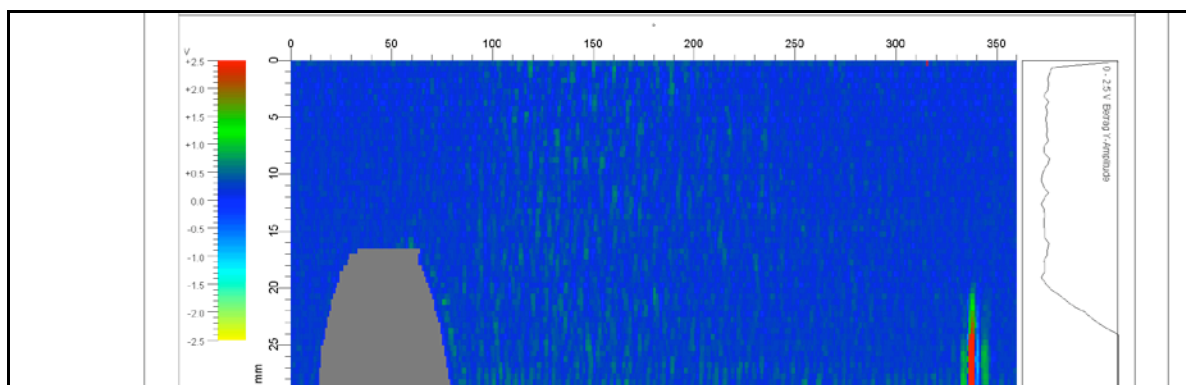
The solution was worked out on the basis of the Elotest PL500. A multi-channel design allowed it to accurately hide the interference contours according to their location so that a test range of up to near the edges of the liner or ventilation borehole could be achieved. The fault evaluation was carried out by the internal evaluation gates of the Elotest PL500.

The test was implemented using rotors and an adapted multi-channel rotary probe with a rotor speed of approximately 3000 revolutions per minute. The stipulated performance speed was able to be achieved through the parallel testing of 2 cylinder liners each at the same time.

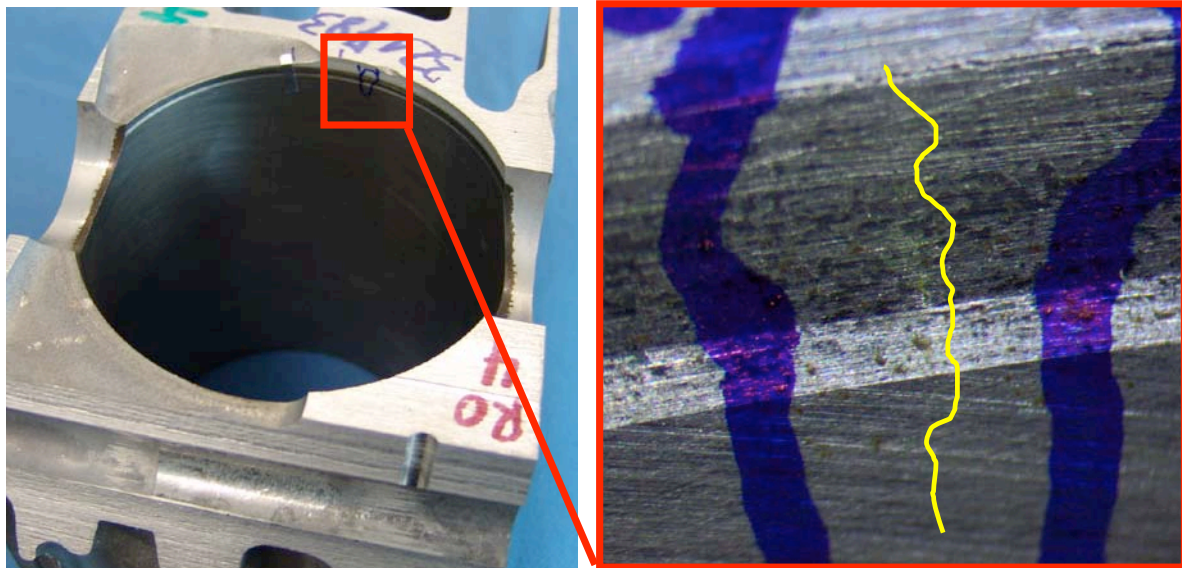
Below are C-scan representations of the liners displaying representative defects.



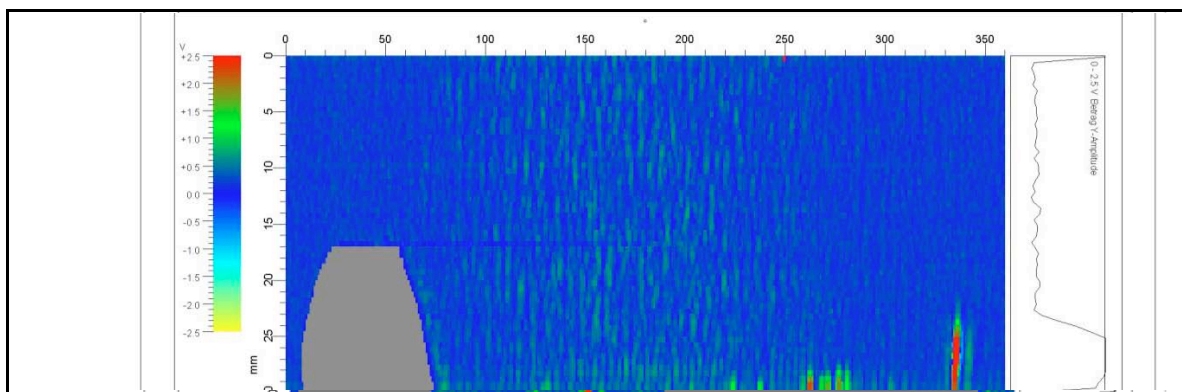
Images/ liner no. 1 with crack (yellow run approximately 1 mm to the right of the actual crack)



Scan/ 360° processing of the running surface according to eddy current testing with borehole and natural crack



Images/ Buchse 321783RO4 with crack (yellow run approximately 1 mm to the right of the actual crack)



Scan/ 360° processing of the running surface according to eddy current testing with borehole and natural crack

Test equipment:

Instrument: ELOTEST PL500, 3-channels
 ScanAnalyzer Software (ESR) 7.0 RO
 Rotor: HDR 17/ 2-2
 Rotordrive: Frequency inverter 50Hz/ 3000 U/min
 Probe: Rotating probe Ø 91,90 mm, Length: 180 mm

Events

Heat Treatment Colloquium 2011, Wiesbaden, Germany



We were once again represented with a booth at the Heat Treatment Colloquium this year. Highlights of the conference included the new ELOTEST IS500 with various sorting tasks.

The 67th conference for heat treatment, materials engineering, manufacturing and process technology took place in the Rhein-Main-Hallen in Wiesbaden from October 12th to the 14th, 2011.

The focal points were:

1. Thermal fatigue
2. High-strength lightweight construction materials
3. Quality assurance for the heat treatment process
4. Cleaning technology
5. Innovations in material and heat treatment technology as well as manufacturing and process technology



**HK - Heat Treatment Colloquium, Wiesbaden
October 12th - 14th, 2011**

<http://www.awt-online.org/index.html>



testXpo, ZWICK trade fair in Ulm, Germany



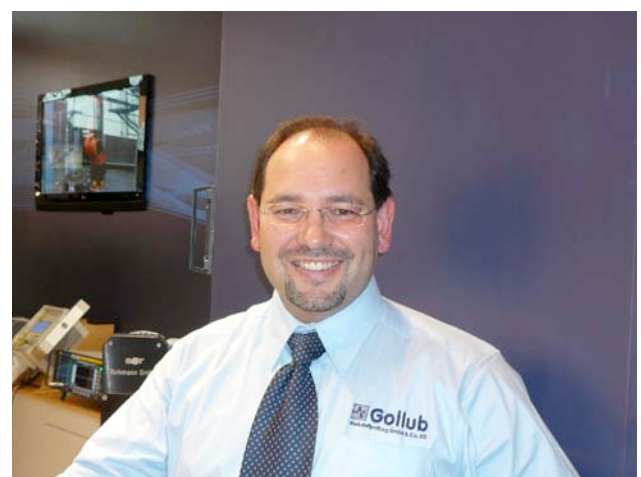
A very special anniversary – The 20th testXpo...

...The 20th testXpo was hosted by Zwick from October 10th to the 13th. 19 years – that means more than 25,000 visitors, over 1,300 presented exhibits, and nearly 500 presentations held.

This year the company Gollub was also represented by its CEO Manfred Cierpinski as well as the company CNS by its CEO Lutz Lindecke.

Group tours provided visitors with special insight into the ZWICK company as well as a short but intensive overview of the exhibitors and their products.

Many professional presentations offered visitors a diverse program. The companies Gollub and CNS were also represented this year with a presentation entitled „Eddy Current Testing - Fast and Inexpensive Quality Assurance for Manufacturing“.



Manfred Cierpinski, Gollub Werkstoffprüfung GmbH & Co. KG

The new ELOTEST IS500 as well as all other Rohmann GmbH products were presented at the exhibition.

You will find more information about testXpo by clicking this link:

<http://www.zwick.de/de/aktuelles/testxpo.html>

Exhibition-Feedback – Jakarta Seminar, Indonesia

Simon Barnes, from Rohmann UK, was honoured to be invited by the Indonesia Society of NDT (Asosiasi Uji Tak Rusak Indonesia) to present a full day of presentations in Jakarta on July 26 2011. The topic for the day was all about Rohmann GmbH products and some interesting applications in the field of Aerospace and other industries. Ichisa Engineering the local sales agent for the region organised the event. Almost 90 people attended from a wide range of industries, as well as universities.

The morning presentations covered different and overview of Rohmann GmbH and its history to date as well as aspects of eddy current in aerospace including introduction of the portable range of Elotest instruments. A number of custom probe solutions were also presented to give some ideas to the audience how innovative Rohmann is. To close the morning the Elowheel 1000 and EloScan systems were discussed. After a buffet lunch, in-line systems were introduced including the new Elotest IS500 instrument. Application examples were shown such as Tube and Bar testing, this included the use of ULAD and ULAS coils as well as EC rotors.



Simon Barnes



To close the day of presentations, a movie of the Rohmann product was shown, followed by a question and answer session.

This was a very successful visit to Indonesia and thanks go to Ichisa Engineering for their excellent organisation of the event and to Asosiasi Uji Tak Rusak for their kind invitation to allow us present Rohmann.

Simon Barnes, Rohmann UK Ltd.

COFREND DUNKERQUE – exhibition feedback

After TOULOUSE (AERONAUTIC industry) in France in 2008, the COFREND exhibition and conferences took place this year at DUNKERQUE, North of France, where Steel and Petrol industry is active.

During this event we have officially launched the new AREVA NDT organisation worldwide named "AREVA NDE SOLUTIONS". INTERCONTROLE IC ESCOFFIER (AREVA NDE Solutions France) decided to get for this occasion an impressive booth of 64 m², divided in 4 areas, corresponding to 4 NDE techniques (ET – UT – RT – MT/PT).

The Eddy Current (ET) area was very attractive because, we benefited from a big support on behalf of the company with Gerald Schneibel's presence during all week and with a lot of new instruments and dynamic presentation.

In addition to well known ELOTEST M2, M3, B300 equipments we presented:

- New ELOTEST IS500 Q with 8 frequencies dynamic sorting application on screws
- New ELOTEST IS in Crack mode configuration with dynamic brake disc inspection



- New PL500 in ECA (Eddy Current Array mode) with ECA probe and ScanAnalyzer update version 7
- New movie on all ESR equipment range including rail test and presentation of the reference system EloScan + new Wheel tester bench

A glass showcase present some special application in industry and also some application we have in nuclear plant through INTERCONTROLE R&D center.

Conclusion of this event was very positive because of customers visits number with top quality contact and competitions comparison.

Jean Michel SPINELLI, INTERCONTROLE - IC Escoffier

EDDY CURRENT LEVEL 1 & 2 TRAINING IN FRANKENTHAL

REGISTER NOW AT: WWW.VECTOR-TUB.DE

Where safety is important, questions are asked of experts, experts who guarantee stability, durability loading capacity and therefore safety.

Since 1993 SECTOR Cert GmbH has qualified and certified non-destructive testing experts. SECTOR Cert offers industries highly respected certification through the use of a Europe-wide network of training and testing centers, continuous checks on the network partners as well as the special practical-oriented training and testing. So; only those who are certified are qualified!

In co-operation with Rohmann GmbH, VECTOR and SECTOR Cert GmbH are holding eddy current level 1 and 2 training and exams 1+2 in Frankenthal.

Course content:

- The difficult part of level 1 training is the basics of behavior of magnetic induction, eddy current technology and impedance plane display.
- Intensive familiarisation with generic and special instruments.
- An overview of industrial applications including pressure tank manufacture, tube production and aviation.
- For participants from all industries material sorting is covered.

Training Dates 2012:

Kurs E1-110: 23.01. – 01.02.2012

Kurs E3-262: 21.05. – 26.05.2012

Kurs E1-112: 11.06. – 20.06.2012

Kurs E2- 69: 08.10. – 17.10.2012

Please check our home page for the dates of the practical training and exams

Prices:

Level 1: (5 Day course) 1.250,- EUR

Level 2 (5 Day Course) 1.250,- EUR

Practical training with exam preparation (2 Days) 660,-EUR

Exams Level 1 or 2 + Certificate + Licence (1 Day) 710,- EUR



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www.vector-tub.com

Exhibition Dates 2012

Fachtagung Bahnwesen, Wittenberge, GERMANY
20. - 23. March 2012

TUBE and WIRE, Düsseldorf, GERMANY
26. - 30. March 2012

WCNDT, Durban, South Africa
16. - 20. April 2012

CONTROL 2012, Stuttgart, GERMANY
8. - 11. May 2012



Rohmann GmbH stand at CONTROL 2011 in Stuttgart

Software

A new software release for the ELOTEST PL500 and the ELOTEST IS500

Software release 1.5 for the ELOTEST PL500 and the ELOTEST IS500 contains numerous new functions and improved details which provide further advantage for the series of user-friendly inline eddy current test equipment.

The new release integrates the numerous wishes and suggestions of our customers and representatives. We would like to take this opportunity to thank you for the constructive feedback and provide a few examples of how we worked together to successfully improve upon an already outstanding system.

One completely new feature provides the ability to use **signal mixes**. The type and manner of the signal mix must be configured ex works for this. Customary two-channel mix operating types as well as complex multiplexed mix-modes are possible. The mix channels are parameterized via the usual user interface so that each mixed channel has its own filter and a complete signal processing chain. Mix operating types are used for things such as heat exchanger testing, where supports can be „mixed out“ in order to prevent producing pseudo-reject signals. The same mechanism was also used to achieve the new lift-off compensation. This allows both a distance probe as well as a crack detection probe to be operated and lift-off variations to be compensated using just one channel.

PL500 or IS500 systems are often put to use as universal systems furnished with **multiple channels** that are not always used at the same time. The new software now includes the option to switch off unused channels so that they do not output and interference reports anymore.

Many improvements and changes relate to the **interface to PC software modules** such as the ScanAlyzer for visually displayed eddy current testing and the EloLine software for long object testing. The ELOTEST PL500 is now qualified for use in EloScan robot systems for the automated testing of aircraft engine components.

A somewhat concealed but often requested new feature is the option to save various reports as PDF files to a connected

USB flash drive. The function is triggered by pressing and holding down the Esc button. Settings can be made in the System->Admin menu to determine whether it is a screenshot, a crack report, or a sort report that is saved.

Following the motto „Simple things must be simple but complex things must also be possible,“ the software now displays the required parameters for the powerful **multiplex mode** only if this mode of operation is configured. If no multiplex is being used for a specific application, the parameterization for it will not be displayed. The parameterization has also been significantly simplified through the automatic specification of the multiplex parameters for the cases in which the multiplex is required.

The flexible solution for **access management** via a coded USB flash drive has also been further improved. The device can now handle multiple flash drives inserted at the same time. The administrator can now use the System menu to set the user level at which the device should run if no flash drive is inserted. It is therefore possible for the administrator to „lock“ the device so that only authorized users can make changes to the settings with their USB flash drive, for example.

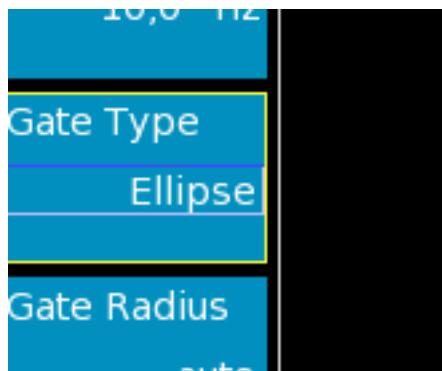
One wish that was often expressed was to have the currently **loaded setting** displayed in the status line of the device. You can now check whether the correct setting is being used for the current test at a glance. If the settings have been changed after loading or saving the setting, this is also indicated by a star in the setting name.



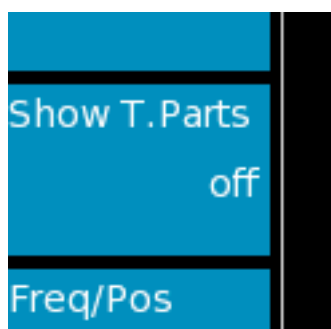
The devices are generally installed so that the rear side with its status light diodes is not easily accessible and not even available in the IS500, so for this reason the **presentation of status information** was improved on the display. Probe trouble and overloads as well as the four gate outputs and the test release status are displayed per signal display.

New features in Sort Mode

ELOTEST PL500 and ELOTEST IS500 devices equipped with a module for material sorting can now be operated more easily as well. The selectivity of the sorting algorithm was further improved and the stability of the sorting was increased. Many suggestions from the practical use of our customers and representatives have also been integrated into the improvements to the user interface of the sorting module. Due to multiple requests, customary **elliptical gates** have now been implemented in addition to our innovative bubble gate evaluation gates. The gate type can be selected for each individual frequency.



The **Teach Part View** can now be turned on or off in the **Config menu** so that the user can get a quick overview of the process drifts.



Those looking for precise information can switch to the One Frequency View Mode and focus on viewing the signal level of a single frequency in Fullscreen Mode All of the zoom settings are available for this, of course.

The new **Copy function** which enables entire sort stations to be duplicated or testing positions to be copied within a station. This can significantly reduce the setting adjustments that need to be made for complex sorting tasks.

New interfaces

The fieldbus module which can be delivered with your choice of a Profibus or DeviceNet connection has been newly added to the list of interface modules. This module enables the automation technician to integrate the ELOTEST PL500 or the ELOTEST IS500 into more complex systems even more easily than before.

Numerous additional small improvements

Over the course of product maintenance, the performance of the user interface was greatly improved and many additional small improvements were made. Ask your representative for a software update today in order to enjoy the new features as soon as possible.

Application – Surface crack detection on a rotor blade

Crack detection under the lacquer coat. Concealed in the MR3/MF mini-rotor, a test track of 30 mm is covered by the RSMT disc probe. The mini-rotor is positioned in the AMT guide so that the disc probe rotates approximately 0.1 mm above the sheet surface. The sheet curvature can make out changes in distance of up to 0.3 mm. These are suppressed by the filter adjustment and the calibration at different distances. The high speed of 2,800 revolutions per minute enables fast testing of flat and almost flat sheet areas. The YT display on the M3 display shows a rotation of the probe and thereby enables the location of the defect to be precisely determined.

The calibration was carried out using test piece TP1, underside, aluminum, reference defect = 0.1 mm wide and 0.5 mm deep.



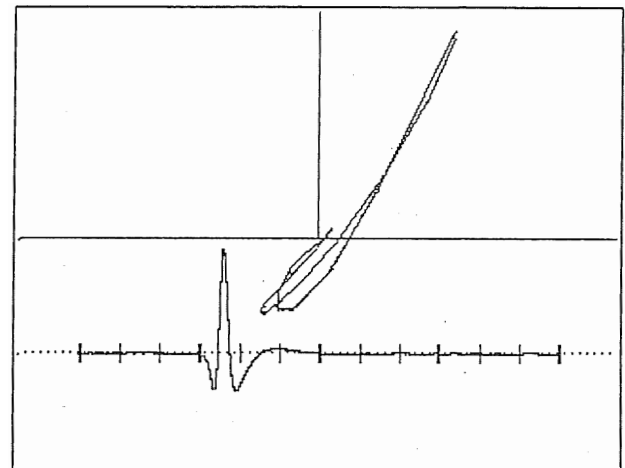
RSMT rotating mini-disc probe

Application:
Rotating mini-disc probe for dynamic surface testing.

Probe system: Differential rotating probe
Frequency range: 50 kHz - 2.5 MHz
Active range: Approx. 1.5 mm

Technical data

Housing: Stainless steel
Standard diameter: 10 - 20 - 30 - 40 - 50 mm



Frequency: 500.0 kHz	Band Width Limit: High
Phase: 49.0 °	X-Offset: 0
Amplitude: 100 %	Y-Offset: 0
Preamplifier: 19dB*	Probe Input: Universal
MainAmp.: 1.5dB	Display: Dual Screen
Y-Spread: 0 dB	Record: on
Total Gain: 20.5/20.5 dB	Record Time: 20s
Lowpass: 1.25 kHz	Grid Width: 40 dots
Highpass: 300.0 Hz	Intensity: 5
HD-Filter: 0	Gate Mode: Circle
HF-Attenuator: off	Timebase: 5 ms
	Persistence: 0.2s/200kHz
	Dotjoin: off
	Audio Alarm: off

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