FOERSTER DEFECTOMETER®
Probes

Foerster - Your partner for eddy current applications

We have been pioneers in the field of eddy-current technology for non-destructive material testing for more than 50 years.

Take advantage of our know-how!

Our range of DEFECTOMETER® probes are completely oriented toward solving customer-specific tasks to optimize testing procedures and increase benefits for the user.

We offer:

- Standard and special probes
- Ongoing innovation for solutions to customer testing problems
- Certification on the basis of ISO 9001
- First-class and reliable service

This catalog introduces our complete DEFECTOMETER probe range.

Quality

Foerster is committed without compromise to the manufacture of innovative, high-quality products for non-destructive materials testing.

Among other things, the company has been certified in accordance with ISO 9001. This provides the security you require for the solution of safety-relevant testing tasks. You can make use of the qualification of a competent partner - worldwide.

Efficiency

Foester's well designed probes are characterized by high mechanical stability and ease of use combined with convenient sizes and shapes for all common testing needs. Additionally, we provide custom designs for your difficult testing requirements.

The electrical properties of our probes ensure constant, reproducible results - even in continuous operation under unfavorable ambient conditions at the testing location.

Design and Ergonomics

The probe shape, tailored to the respective testing task, establishes the flexibility of our probe range. Our goal is to ensure safe, fatigue-free operation by the user and to increase testing efficiency.

Innovation

New testing tasks may require new application specific probe designs. We invite you to challenge us and our innovative design capabilities. Entrust your testing task to a strong, experienced partner. If our existing probe range should ever fail to cover your testing task, contact us and we will react quickly to your special requirements.

Sales Network

Foerster's worldwide sales network guarantees a prompt response to your inquires and assures readiness for qualified service.

Introduction

The probes in this catalog were developed specifically for use with the Foerster DEFECTOMETER and designed to provide the good test results to which users of the DEFECTOMETER have become accustomed.

The most important advantages of DEFECTOMETER testing are:

- Simplest possible operation
- Automatic lift-off and zero compensation
- Testing without removal of paint or rust
- High sensitivity with flaw resolution to approximately 20 μm (.0008 inches)
- Proportional determination of crack depths

Users of the DEFECTOMETER 2.837 can enjoy an even greater range of advantages including:

- Various display possibilities for test signals
- Possibility of documenting results via printer or PC
- Use of two evaluation thresholds for the test results
- Possibility of control via PC or PLC

Function

The Defectometer 2.837 is a modern eddy current instrument for nondestructive testing of conductive materials for surface flaws. The material surface may be painted, lacquered or untreated.

Versatility and simplicity make the Defectometer an ideal instrument for the aerospace and metal processing industries.

Capabilities of the Defectometer

- Testing for surface cracks in rivet holes, on turbine blades, wheels, etc.
- Simple sorting tasks
- Testing for hardness changes
- Crack detection on any semi-finished or finished product
- Flaw resolution to approximately .0008 inch
- Two alarm thresholds
- Three LCD display modes

DEFECTOMETER 2.837 with probe

Application

All probes offered in this catalog are suitable for detection of flaws on surfaces (surface cracks) or in an area close to the surface of electrically conductive materials.

This highly sensitive method reliably detects extremely small cracks even without the removal of protective coatings such as paints.

A separate brochure and leaflet are available for the DEFECTOMETER 2.837. The order numbers for these documents are:

Title	Order Number
DEFECTOMETER color brochure	906 350 1
DEFECTOMETER technical leaflet	145 911 2

For additional information regarding the DEFECTOMETER 2.837, contact FOERSTER at:

www.Foerstergroup.com
e-mail: sales@Foerstergroup.com

Probe Selection Criteria

DEFECTOMETER probes and operating test frequencies are optimized to the material that you want to test. Foerster offers probes for three conductivity ranges as follows:

Type	Application	Conductivity of Test Pieces	Defectometer Test Frequency
NFe Probes	for non-ferromagnetic materials such as aluminum	4 to 60 MS/m (7 to 103% IACS)	2 MHz
Austenitic Probes	for austenitic materials such as austenitic stainless steels or titanium	0.5 to 4.5 MS/m (1 to 8% IACS)	4 MHz
Fe Probes	for ferromagnetic materials such as martensitic steels	6 to 10 MS/m (10 to 17% IACS)	4 MHz
Unshielded probes detect only influences in an area measuring 2 to 3 times the diameter of the probe. They possess a larger effective width and track width and are less sensitive to tipping or wobbling motions during testing. Material edges or abrupt changes in geometry have a more significant effect upon the test results. On the other hand, the sensitivity reduction at an increasing distance from the surface of a test piece (distance dependency) is lower than for shielded probes. (see Fig. 1)			
Shielded probes concentrate the excitation field, which results in smaller effective track widths. A shielded probe can be used to test very close to material edges, rivet heads and corners. (see Fig. 2)			
In principle, nearly all DEFECTOMETER probes can be supplied with or without shielding. All Foerster DEFECTOMETER probes have: • High sensitivity • Robust design • Plug-in cable connection			

Design

DEFECTOMETER probes are available in various standard designs. One or several dimensions of these standard probes can be specified as required to solve a particular testing task. It is also possible to develop and construct special probes for testing tasks that cannot be solved with the standard probes.

Useful Life

As the probe tip slides across the material surface during testing it will wear. This wear initially will make the probe more sensitive but will eventually result in exposure of the copper probe windings and failure of the probe. Because of the calibration of the DEFECTOMETER that is performed prior to each use of the probe the increased sensitivity (due to wear) will not affect the test results. It is not necessary to replace the probe until wear has progressed far enough to expose the copper coil.

Wear of the probe tip can be reduced by simply applying a thin, self adhesive Teflon film to the active surface of the probe. This protection must be applied before calibration of the DEFECTOMETER and probe to the respective testing task.

Cable Length

The cable length is an important factor to consider during the design and manufacture of DEFECTOMETER probes. All of Foerster's standard probe cables (both plug-in cables and permanently connected cables on various probes) are 1.5 meters in length. The cable characteristics are taken into account when the probes are manufactured and calibrated. The 1.5 meter cable length is generally sufficient for most applications. If longer cables are required, the associated probes can be adapted to the longer cable length. Keep in mind that for proper operation, only matched cables and probes may be connected to the DEFECTOMETER.

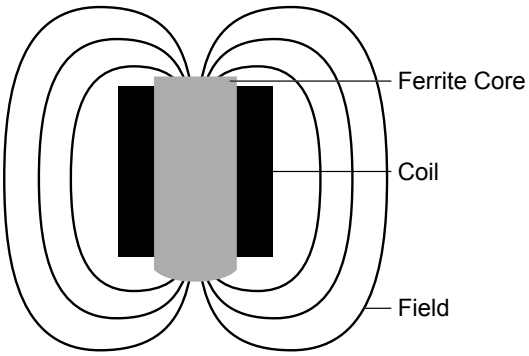


Fig. 1 - Field of an unshielded probe

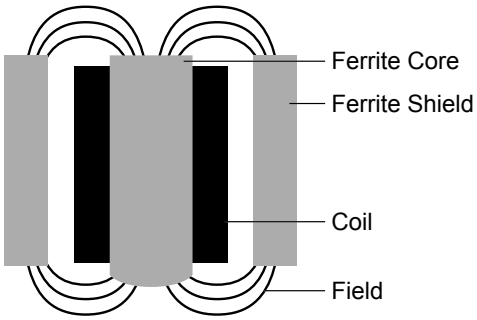


Fig. 2 - Field of an shielded probe

Straight Probes

Straight Pencil Probes

The standard straight pencil probe is suitable for all common DEFECTOMETER testing tasks. Refer to the illustration above for the most important dimensions of the probe. If the standard dimensions are unsuitable for your application, you can define A and B within the specified ranges.

When ordering, indicate the desired diameter A and the length B together with the order number listed below.

Unshielded / Ø A = 4.0 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard Ø A = 4mm B = 12.5mm	2.835.01-2500	1230000	2.835.01-4500	1230786	2.835.01-3500	1231006
Custom Ø A = 4mm B = ? (5 to 250mm)	2.835.99-2500	1292960	2.835.99-4500	1292978	2.835.99-3500	1292986

Shielded / Ø A = 4.0 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard Ø A = 4mm B = 12.5mm	2.835.01-2000	1230336	2.835.01-4000	1230565	2.835.01-3000	1289950
Custom Ø A = 4mm B = ? (5 to 250mm)	2.835.99-2000	1292994	2.835.99-4000	1293001	2.835.99-3000	1293010

Shielded / Ø A = 2.5 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard Ø A = 2.5mm B = 12.5mm	2.835.69-2000	0064238	Not Available			
Custom Ø A = 2.5mm B = ? (5 to 250mm)	2.835.70-2000	0064246	Not Available			

Ordering Example for a shielded probe with custom dimension B = 50 mm to be used to test magnetic steel: Pencil probe, shielded Fe, Order No. 1293010, Part No. 2.835.99-3000, B = 50 mm.

Angled Probes

Angled Pencil Probes

Various designs of the angled pencil probe are available with the probe tip (containing the probe element) bent at an angle of 90, 100 or 135°. These probes permit access to hard-to-reach testing locations.

Custom probes, with user-specified probe tip drop lengths, shaft lengths and shaft diameters are available upon request.

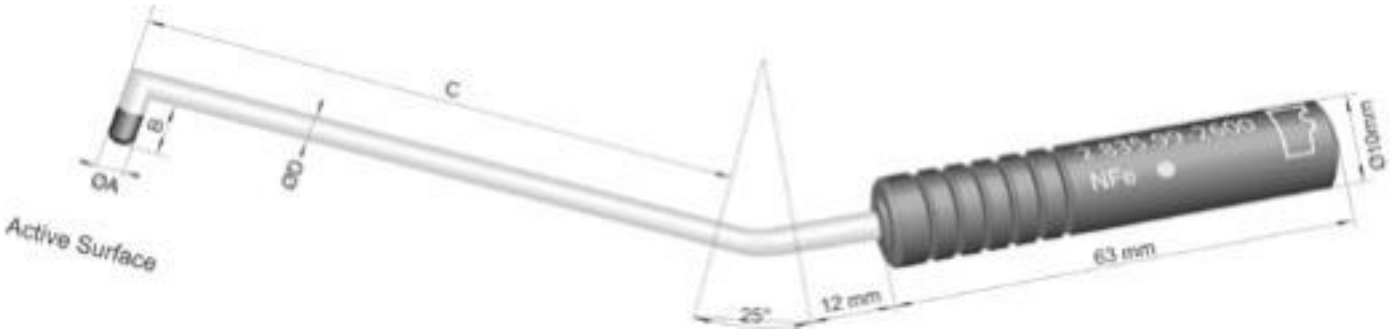
Angled Probe (90° tip)

Angled Probe (135° tip)

Angled Probe (100° tip)

Angled Probe (90° tip with angled shaft)

Angled Probes



90° Angled Probes with 25° angled shaft

Unshielded / Ø A = 4.0 mm						
	NFe		Austenitic		Fe	
	Part No.	Order No.	Part No.	Order No.	Part No.	Order No.
Standard ØA = 4mm B = 10mm C = 100mm ØD = 4mm	2.835.01-2600	1228854	2.835.01-4600	1228900	2.835.01-3600	1228935
Custom ØA = 4mm B = ? (10 to 25mm) C = ? (10 to 250mm) ØD = 4mm	2.835.99-2600	1293028	2.835.99-4600	1293036	2.835.99-3600	1293044

Shielded / Ø A = 4.0 mm						
	NFe		Austenitic		Fe	
	Part No.	Order No.	Part No.	Order No.	Part No.	Order No.
Standard ØA = 4mm B = 10mm C = 100mm ØD = 4mm	2.835.01-2100	1228803	2.835.01-4100	1228862	2.835.01-3100	1289969
Custom ØA = 4mm B = ? (10 to 25mm) C = ? (100 to 250mm) ØD = 4mm	2.835.99-2100	1293052	2.835.99-4100	1293060	2.835.99-3100	1293079

Shielded / Ø A = 2.5 mm						
	NFe		Austenitic		Fe	
	Part No.	Order No.	Part No.	Order No.	Part No.	Order No.
Standard A = 2.5mm B = 10mm C = 100mm ØD = 4mm	2.835.69-2100	0064254	Not Available			
Custom ØA = 2.5mm B = ? (5 to 25 mm) C = ? (10 to 250mm) ØD = ? (2.5 or 4mm)	2.835.70-2100	0064262	Not Available			

Angled Probes

90° Angled Probes

The 90° angled pencil probe permits access to hard-to-reach testing zones of critical components. Standard and custom probes are available. When ordering a standard probe you must specify the part and order numbers as indicated in the table below. When ordering a custom probe you should specify the drop length (dimension B), the shaft length (dimension C), and the shaft diameter (dimension D) in addition to the part and order numbers.

Shielded / Ø A = 4.0 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard ØA = 4mm B = 10mm C = 30mm ØD = 4mm	2.835.01-2130	1357395	2.835.01-4130	1467794	2.835.01-3130	1469487
Custom ØA = 4mm B = 10 to 25mm C = 10 to 250mm ØD = 4mm	2.835.99-2130	1467778	2.835.99-4130	1467786	2.835.99-3130	1469479
Custom ØA = 4mm B = ? (5 to 10mm) C = ? (10 to 250mm) ØD = 4mm	2.835.99-2150	1466350	Not Available			

Shielded / Ø A = 2.5 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard A = 2.5mm B = 10mm C = 30mm ØD = 4mm	2.835.69-2130	0064297	Not Available			
Custom ØA = 2.5mm B = ? (5 to 25mm) C = ? (10 to 250mm) ØD = ? (2.5 *or* 4mm)	2.835.70-2130	0064300	Not Available			

Ordering Example for an NFe version with custom dimensions B, C and D: Pencil probe angled shielded NFe, Order No. 1466350, Part No. 2.835.99-2150, B = 18 mm, C = 120 mm, D = 4 mm.

Angled Probes

100° Angled Probes

The 100° angled pencil probe permits access to hard to reach locations of most critical component testing zones. When placing an order for a custom probe it is important to include the desired dimensions for B and C in addition to the Order Number and Part Number.

Shielded / Ø A = 4.0 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard ØA = 4mm B = 4mm C = 30mm ØD = 4mm	2.835.01-2145	1355694	Not Available			
Custom ØA = 4mm B = ? (5 to 25mm) C = ? (10 to 250mm) ØD = 4mm	2.835.99-2145	1459597	Not Available			

Shielded / Ø A = 2.5 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard ØA = 2.5mm B = 8mm C = 30mm ØD = 4mm	2.835.69-2145	0064319	Not Available			
Custom ØA = 2.5mm B = ? (5 to 25mm) C = ? (10 to 250mm) ØD = 2.5mm	2.835.70-2145	0064327	Not Available			

Ordering Example for a version with custom dimensions B and C to test aluminum: Pencil probe angled shielded NFe, Order No. 1459597, Part No. 2.835.99-2145, B = 18 mm, C = 120 mm.

Angled Probes

135° Angled Probes

The 135° angled pencil probe permits access to hard to reach locations of most critical component testing zones. When placing an order for a custom probe, it is important to include the desired dimensions for B and C in addition to the Order Number and Part Number.

Shielded / Ø A = 4.0 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard ØA = 4mm B = 10mm C = 30mm ØD = 4mm	2.835.01-2140	1357409	Not Available		Not Available	
Standard ØA = 4mm B = 14mm C = 10mm ØD = 4mm	2.835.98-2100	1402404	Not Available		Not Available	
Custom ØA = 4mm B = ? (5 to 25mm) C = ? (10 to 250mm) ØD = 4mm	Not Available		Not Available		2.835.99-3140	1460820

Shielded / Ø A = 2.5 mm						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard A = 2.5mm B = 10mm C = 30mm ØD = 4mm	2.835.69-2140	0064335	Not Available			
Custom ØA = 2.5mm B = ? (5 to 25mm) C = ? (10 to 250mm) ØD = 2.5mm	2.835.70-2140	0064351	Not Available			

Ordering Example for a version with ØA = 4 mm and custom dimensions B and C to test carbon steel: Pencil probe angled shielded Fe, Order No. 1460820, Part No. 2.835.99-3140, B = 18 mm, C = 120 mm.

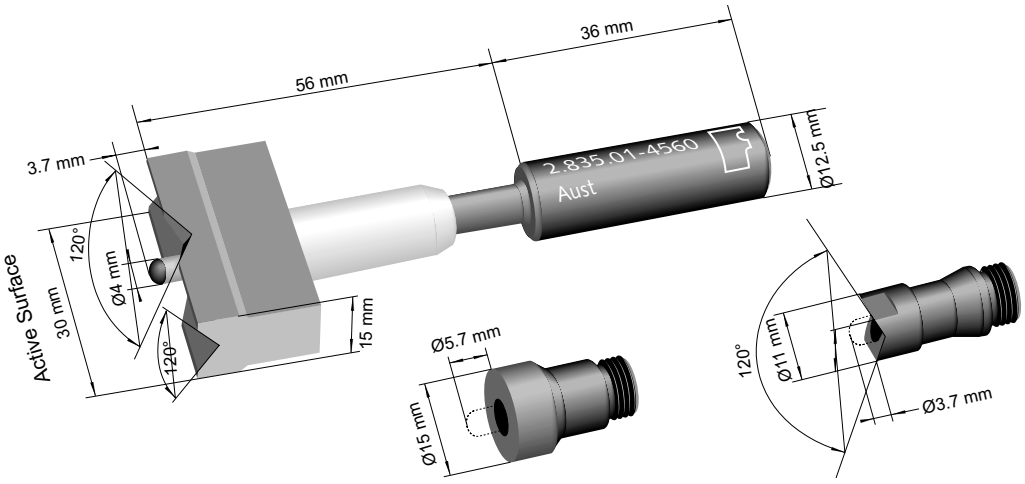
Angled Probes

Special Shielded Angled NFe Probes

Shielded / Ø A = 2.5 mm						
	NFe		Austenitic		Fe	
	Part No.	Order No.	Part No.	Order No.	Part No.	Order No.
Special ØA = 2.5mm B = 11mm C = 52mm D = 4mm	2.835.07-6901	0017795	Not Available			
Special ØA = 2.5mm B = 11.5mm C = 50mm ØD = 2.5mm	2.835.78-6900	0191892	Not Available			

Shielded / Ø A = 4.0 mm						
	NFe		Austenitic		Fe	
	Part No.	Order No.	Part No.	Order No.	Part No.	Order No.
Special ØA = 4mm B = 5mm C = 150mm ØD = 4mm	2.835.97-2100	1402550	Not Available			

Spring-Loaded Pencil Probes



Spring-Loaded Pencil Probes

The diagram above shows the "spring loaded pencil probe" with three differently shaped guides. These guides are screwed into the spring-loaded sleeve with a screw thread and are easily exchanged for different applications. The guides provided in the scope of delivery include:

- A circular guide (mainly used for testing flat surfaces)
- A square guide with two milled grooves at right angles to each other (for use when testing round or curved test pieces or edges)
- A circular guide with square shoulder and milled groove (for similar applications as the square guide but requiring less space at the testing location)

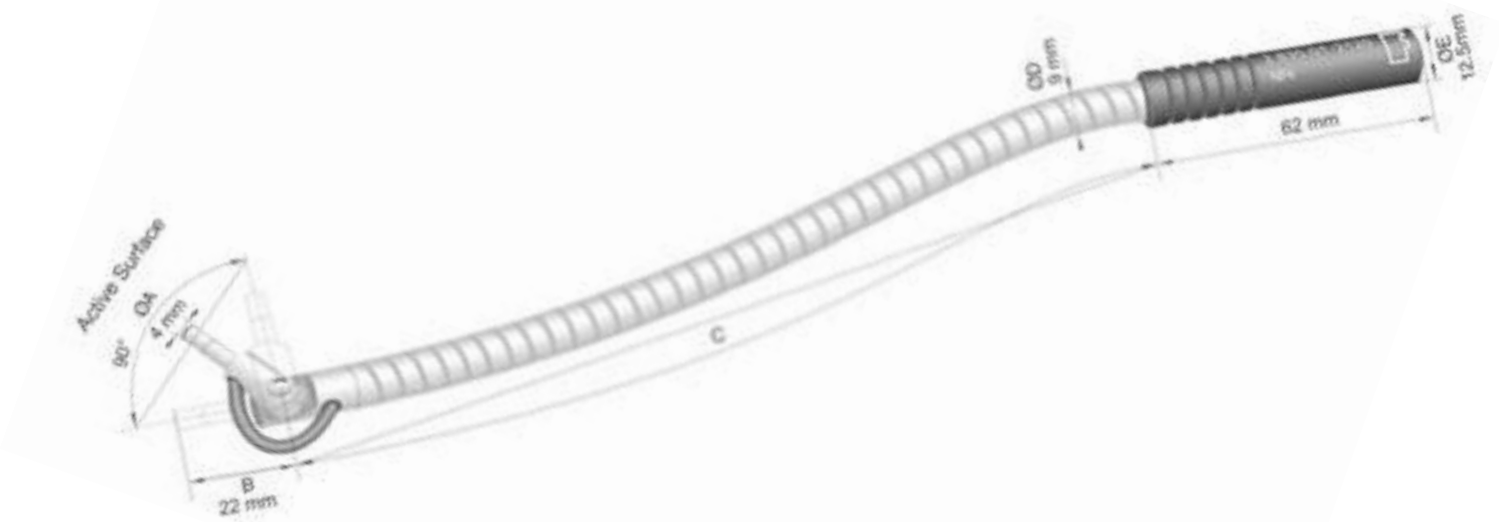
Spring-loading of the probe ensures nearly constant contact pressure of the probe tip on the testing material. This results in consistently good test results at high sensitivity.

Spring-loaded Pencil Probes Unshielded						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard	2.835.01-2560	1234404	2.835.01-4560	1234420	2.835.01-3560	1234455

Spring-loaded Pencil Probes Shielded						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard	2.835.01-2060	1234382	2.835.01-4060	1234336	2.835.01-3060	1293877

Ordering Example for a spring-loaded probe: Pencil probe, spring-loaded, shielded Fe, Order No. 1293877, Part No. 2.835.01-3060.

Flexible Pencil Probes



Flexible Pencil Probes

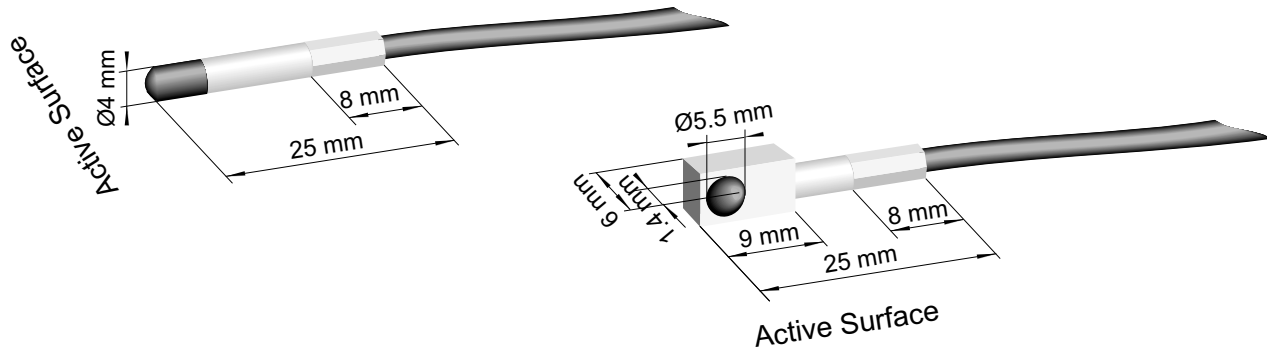
The flexible pencil probe is made with a so-called "goose-neck" with a minimum bending radius of 50mm, which permits its shape to be adapted to the specific testing location. Additionally, the probe tip with probe element can be swiveled up to 90°.

When placing an order for a custom probe, it is important to include the desired dimension for C in addition to the Order Number and Part Number.

Flexible Pencil Probes, Shielded						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Standard ØA = 4mm B = 22mm C = 193mm ØD = 9mm E = 12.5mm	2.835.01-2120	1340140	2.835.01-4120	1418491	2.835.01-3120	1460838
Custom ØA = 4mm B = 22mm C = ?(100 to 250mm) ØD = 9mm ØE = 12.5mm	2.835.99-2120	1439987	2.835.99-4120	1439936	Not Available	

Ordering Example for a custom flexible pencil probe with special shaft length of 125mm: Flexible pencil probe, shielded NFe, Order No. 1439987, Part No. 2.835.99-2120, C = 125 mm.

Micro Probes



Micro Probes

Micro probes are characterized by their extremely compact design. A straight probe with a probe tip measuring only 4 mm in diameter and an angled probe bent by 90° with a probe tip diameter of 5.5 mm are available, both of which have a uniform housing length of 25 mm.

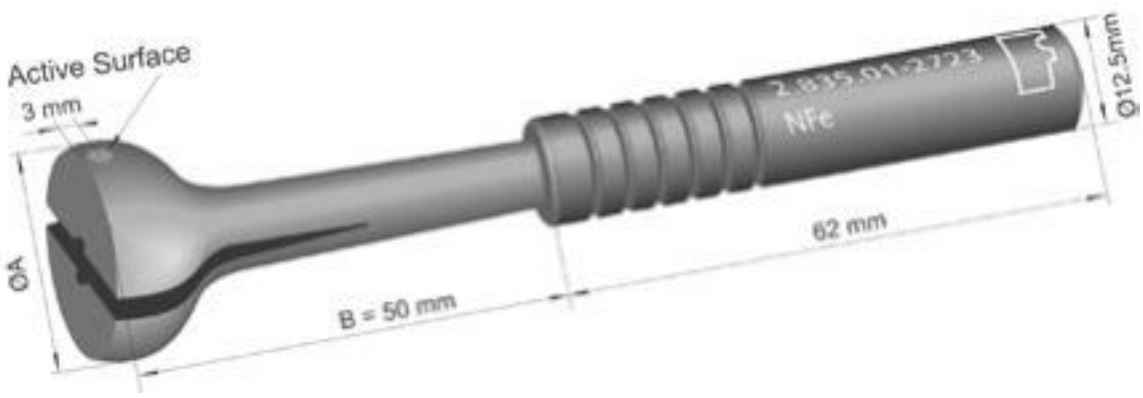
These compact dimensions permit the user to perform reliable testing even in extremely inaccessible test zones. At the same time, the user can guide the probe with the help of a manipulator designed on the basis of his requirements. Testing at hard-to-reach locations and simple installation in customer-specific manipulators are typical features of the micro probes.

Micro Probes						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Unshielded Standard	2.835.01-2570	1234544	2.835.01-4570	1234528	2.835.01-3570	1234536
Shielded Standard	2.835.01-2070	1234480	2.835.01-4070	1234501	2.835.01-3070	1293885

Micro Probes, Angled						
	NFe		**Austenitic**		**Fe**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
Unshielded Standard	2.835.01-2580	1234668	Not Available	Not Available	2.835.01-3580	1234684
Shielded Standard	2.835.01-2080	1234609	2.835.01-4080	1234560	2.835.01-3080	1293893

Ordering Example for a micro probe: Micro probe unshielded NFe, Order No. 1234544, Part No. 2.835.01-2570.

Bolt Hole Probes



Bolt Hole Probes

Bolt hole probes are intended exclusively for bolt hole testing with manual probe guidance. The main application field for these probes lies in testing bores on aircraft. In principle it is possible to test all bores in materials of the specified conductivity range on safety-critical devices, components and assemblies during their manufacture or maintenance.

Bolt hole probes possess a slotted probe tip for adaption to various hole diameters. The spread of the bolt hole probe ensures:

- An even contact pressure and correspondingly constant test sensitivity
- Adaption to the hole diameter

The following tables provide an overview of the **nominal diameter range** and **size increments** in which the bolt hole probes are available and the **adaption** that can be attained by spreading in the respective nominal diameter range.

Nominal diameter ranges	Size increments - unshielded probes standard and variable	Size increments - shielded probes standard and variable
4 to 9 mm	0.5 mm	
9 to 25 mm	1 mm	
8 to 9 mm		0.5 mm
9 to 25 mm		1 mm

Adaption	**Nominal diameter ranges for:**	
	Unshielded probes	Shielded probes
1 mm	4 to 8.5 mm	8 to 8.5 mm
1.3 mm	9 to 25 mm	9 to 25 mm

(All standard bolt hole probes are listed on the following pages. Select the most suitable for your testing task.)

Bolt Hole Probes

Bolt hole probes with dimension B = 50 mm corresponding to the illustration on the previous page are produced as unshielded versions in the diameter range A = 4 to 25 mm for the material types NFe, Aust., and Fe and in shielded versions in the diameter range A = 8 to 25 mm for the material types NFe and Aust.

Ordering instructions for unshielded bolt hole probes with dimension A = 4 to 25 mm Ø, dimension B = 50mm - standard version

Nominalø - maxø **A/mm** - Amax/mm	**NFe Probes**		**Austenitic Probes**		**Fe Probes**	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
4 - 5	2.835.01-2700	1237209	2.835.01-4700	1236008	2.835.01-3700	1236601
4.5 - 5.5	2.835.01-2701	1237217	2.835.01-4701	1236016	2.835.01-3701	1236610
5 - 6	2.835.01-2702	1237225	2.835.01-4702	1236024	2.835.01-3702	1236628
5.5 - 6.5	2.835.01-2703	1237233	2.835.01-4703	1236032	2.835.01-3703	1236636
6 - 7	2.835.01-2704	1237241	2.835.01-4704	1236040	2.835.01-3704	1236644
6.5 - 7.5	2.835.01-2705	1237250	2.835.01-4705	1236059	2.835.01-3705	1236652
7 - 8	2.835.01-2706	1237268	2.835.01-4706	1236067	2.835.01-3706	1236660
7.5 - 8.5	2.835.01-2707	1237276	2.835.01-4707	1236075	2.835.01-3707	1236679
8 - 9	2.835.01-2708	1237284	2.835.01-4708	1236083	2.835.01-3708	1236687
8.5 - 9.5	2.835.01-2709	1237292	2.835.01-4709	1236091	2.835.01-3709	1236695
9 - 10.3	2.835.01-2710	1237306	2.835.01-4710	1236105	2.835.01-3710	1236709
10 - 11.3	2.835.01-2711	1237314	2.835.01-4711	1236113	2.835.01-3711	1236717
11 - 12.3	2.835.01-2712	1237322	2.835.01-4712	1236121	2.835.01-3712	1236725
12 - 13.3	2.835.01-2713	1237330	2.835.01-4713	1236130	2.835.01-3713	1236733
13 - 14.3	2.835.01-2714	1237349	2.835.01-4714	1236148	2.835.01-3714	1236741
14 - 15.3	2.835.01-2715	1237357	2.835.01-4715	1236156	2.835.01-3715	1236750
15 - 16.3	2.835.01-2716	1237365	2.835.01-4716	1236164	2.835.01-3716	1236768
16 - 17.3	2.835.01-2717	1237373	2.835.01-4717	1236172	2.835.01-3717	1236776
17 - 18.3	2.835.01-2718	1237381	2.835.01-4718	1236180	2.835.01-3718	1236784
18 - 19.3	2.835.01-2719	1237390	2.835.01-4719	1236199	2.835.01-3719	1236792
19 - 20.3	2.835.01-2720	1237403	2.835.01-4720	1236202	2.835.01-3720	1236806
20 - 21.3	2.835.01-2721	1237413	2.835.01-4721	1236210	2.835.01-3721	1236814
21 - 22.3	2.835.01-2722	1237420	2.835.01-4722	1236229	2.835.01-3722	1236822
22 - 23.3	2.835.01-2723	1237438	2.835.01-4723	1236237	2.835.01-3723	1236830
23 - 24.3	2.835.01-2724	1237446	2.835.01-4724	1236245	2.835.01-3724	1236849
24 - 25.3	2.835.01-2725	1237454	2.835.01-4725	1236253	2.835.01-3725	1236857
25 - 26.3	2.835.01-2726	1237462	2.835.01-4726	1236261	2.835.01-3726	1236865

Ordering Example for a bolt hole probe with 6 mm nominal diameter: Bolt hole probe unshielded NFe, Order No. 1237241, Part No. 2.835.01-2704.

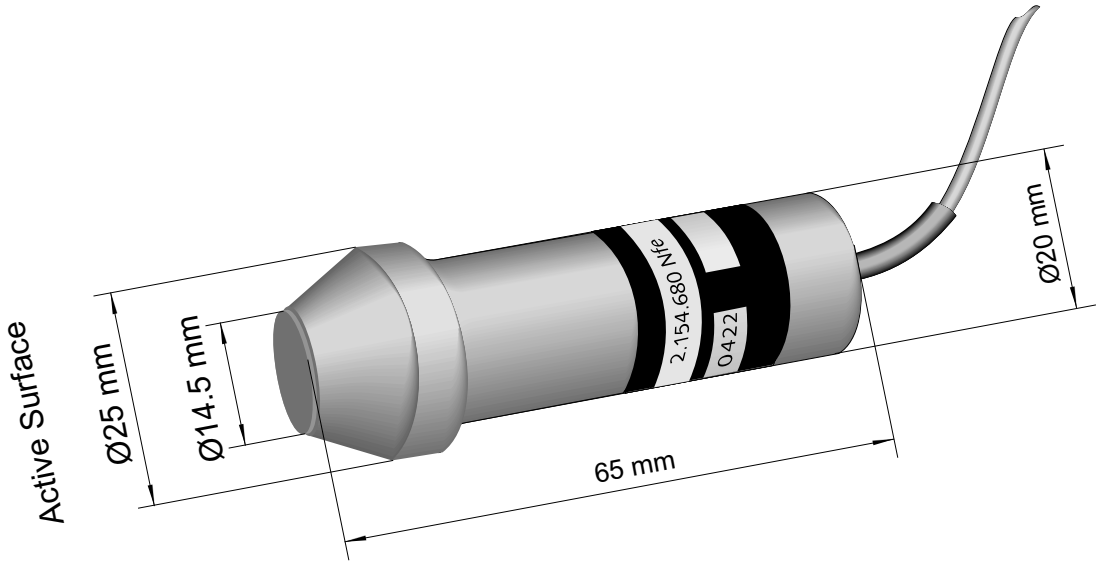
Bolt Hole Probes

Ordering instructions for shielded bolt hole probes with dimension A = 8 to 25 mm Ø, dimension B = 50mm - standard version

Nominal - maxø **A/mm** - Amax/mm	NFe Probes		Austenitic Probes		Fe Probes	
	Part No.	**Order No.**	**Part No.**	**Order No.**	**Part No.**	**Order No.**
8 - 9	2.835.01-2208	1235001	2.835.01-4208	1235508	2.835.01-3208	1296965
8.5 - 9.5	2.835.01-2209	1235010	2.835.01-4209	1235516	2.835.01-3209	1296981
9 - 10.3	2.835.01-2210	1235028	2.835.01-4210	1235524	2.835.01-3210	1296990
10 - 11.3	2.835.01-2211	1235036	2.835.01-4211	1235532	2.835.01-3211	1297007
11 - 12.3	2.835.01-2212	1235044	2.835.01-4212	1235540	2.835.01-3212	1297015
12 - 13.3	2.835.01-2213	1235052	2.835.01-4213	1235559	2.835.01-3213	1297023
13 - 14.3	2.835.01-2214	1235060	2.835.01-4214	1235567	2.835.01-3214	1297031
14 - 15.3	2.835.01-2215	1235079	2.835.01-4215	1235575	2.835.01-3215	1297040
15 - 16.3	2.835.01-2216	1235087	2.835.01-4216	1235583	2.835.01-3216	1297058
16 - 17.3	2.835.01-2217	1235095	2.835.01-4217	1235591	2.835.01-3217	1297066
17 - 18.3	2.835.01-2218	1235109	2.835.01-4218	1235605	2.835.01-3218	1297074
18 - 19.3	2.835.01-2219	1235117	2.835.01-4219	1235613	2.835.01-3219	1297082
19 - 20.3	2.835.01-2220	1235125	2.835.01-4220	1235621	2.835.01-3220	1297090
20 - 21.3	2.835.01-2221	1235133	2.835.01-4221	1235630	2.835.01-3221	1297104
21 - 22.3	2.835.01-2222	1235140	2.835.01-4222	1235648	2.835.01-3222	1297112
22 - 23.3	2.835.01-2223	1235150	2.835.01-4223	1235656	2.835.01-3223	1297120
23 - 24.3	2.835.01-2224	1235168	2.835.01-4224	1235664	2.835.01-3224	1297139
24 - 25.3	2.835.01-2225	1235176	2.835.01-4225	1235672	2.835.01-3225	1297147
25 - 26.3	2.835.01-2226	1235184	2.835.01-4226	1235680	2.835.01-3226	1297155

Ordering Example for a shielded bolt hole probe with 18 mm nominal diameter: Bolt hole probe Aust., Order No. 1235613, Part No. 2.835.01-4219.

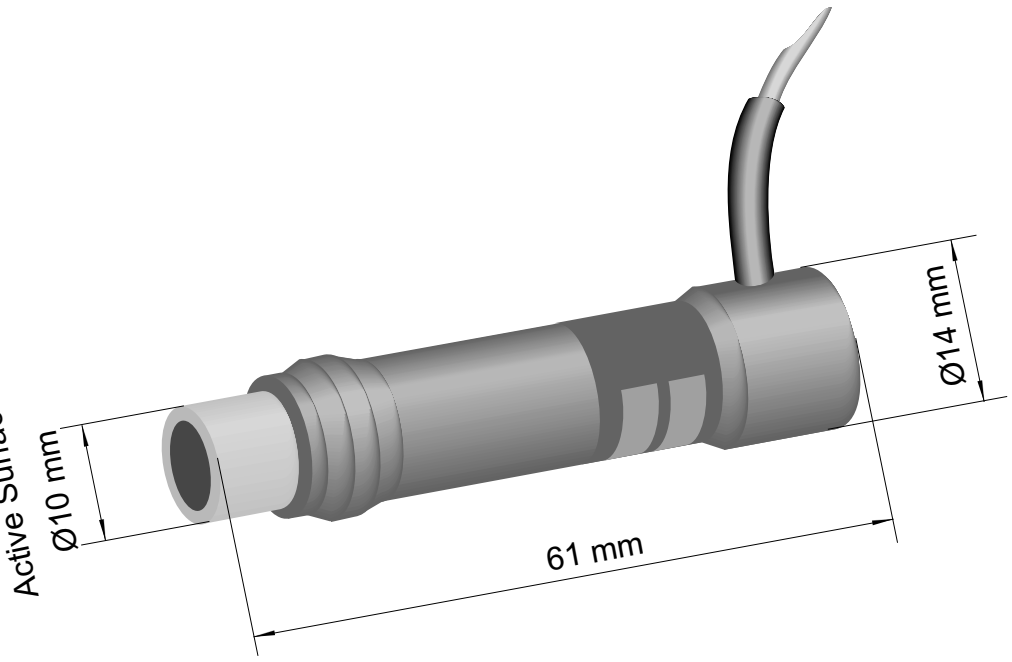
Probe for large crack depths



The probe for large crack depths is specially designed for the detection of deep material cracks. At the same time, there is good linearity between crack depth and result indication, permitting the crack depth to be inferred indirectly. It is available as an unshielded standard probe for the conductivity ranges NFe and Fe/Aust.

Probes for large crack depths				
	NFe		Fe/Aust	
	Part No.	Order No.	Part No.	Order No.
Unshielded	2.154-680	1100483	2.154-580	1100653

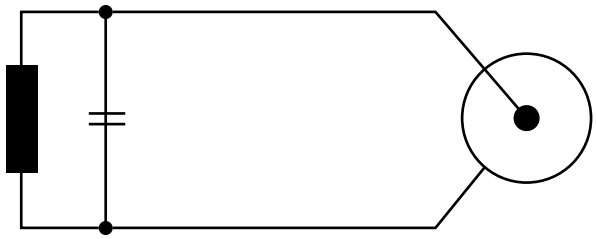
Probe with ceramic protection



The probe with ceramic protection was designed with an extremely abrasion-resistant ceramic ferrule to protect the contact surface of the probe. This protection means that the signal indication of the probe remains constant, even in the case of continuous use with high contact pressure on rough material surfaces.

Probes with ceramic protection				
	NFe		**Fe/Aust**	
	Part No.	**Order No.**	**Part No.**	**Order No.**
Unshielded	2.154-670	1100491	2.154-570	1100661

Probe connection socket, cable and adapter



All of the mentioned pencil and bolt hole probes possess a 2-pole socket into which the probe cable is plugged. This cable for connection to a DEFECTOMETER is 1.5 m long.

A cable plug (Lemosa) is fitted for connection with the probe and a 6-pin DIN plug 41524 is mounted for connection with the tester. The simple plug connection on the probe possesses a locking system which secures the connection when the plug is inserted and does not separate even if the cable is pulled unintentionally.

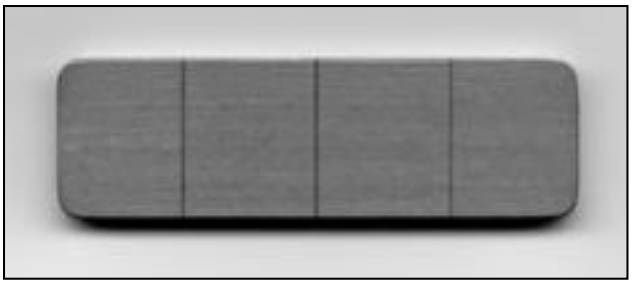
The connection is not separated until a simple manipulation is performed on the outside of the plug.

The connection cable is permanently attached to the probe on probes for deep cracks and probes with ceramic protection.

Corresponding adapter cables for NFe and Fe/Aust. are required if the mentioned probes are to be used with a DEFECTOSCOP SD or a DEFECTOSCOP AF.

Description	Part No.	Order No.
Probe cable for connection to the **DEFECTOMETER 2.835, 2.836**	2.835.01-9902	1234471
Probe cable for connection to the **DEFECTOMETER 2.837**	2.837.01	1460188
Adapter cable NFE for connection of NFe probes to the DEFECTOSCOP SD and the DEFECTOSCOP AF	2.832.02-9903	1331949
Adapter cable Fe/Aust. for connection of Fe or Aust. probes to the DEFECTOSCOP SD and the DEFECTOSCOP AF	2.832.03-9903	1331957

Pricelist Standards



It is a good practice to calibrate the Defectometer and probe before every use in order to obtain optimum test results. This calibration takes just a few minutes and confirms the functional capability of the instrument and probe.

Calibration standards (NFe, Fe, Austenite and Titanium) are available. These calibration standards have been designed to mount securely to the face of the Defectometer and permit quick and easy access during calibration.

All calibration standards come with precision made artificial flaws to assist in setting the required gain and zero compensation. Each standard has test flaw notches with depths (ND) of 0.2 mm, 0.5 mm and 1.0 mm. The notch widths (NW) are 0.1mm.

Description	Part No.	Order No.
Crack Standard NFe **ND = 0.2/0.5/1mm - NW = 0.1mm** **Size: 3x14x45mm**	2.837.01	1448170
Crack Standard AUST **ND = 0.2/0.5/1mm - NW = 0.1mm** **Size: 3x14x45mm**	2.837.01	1448188
Crack Standard Ti **ND = 0.2/0.5/1mm - NW - 0.1mm** **Size: 3x14x45mm**	2.837.01	1448196
Crack Standard Fe **ND = 0.2/0.5/1mm - NW - 0.1mm** **Size: 3x14x45mm**	2.837.01	1448200

NATO codes

The following NATO stock numbers currently apply to DEFECTOMETER probes, connecting cables and transport case:

NATO stock number	Designation	Nominal Ø mm	Part No.	Order No.
N663512-3245248	**Pencil probe** unshielded NFe		2.835.01-2500	123 000 0
N663512-3249130	**Pencil probe** unshielded NFe		2.835.99-2500	129 296 0
N663512-3249131	**Pencil probe** shielded angled NFe		2.835.99-2100	129 305 2
N663512-3259899	**Pencil probe** shielded NFe		2.835.99-2000	123 033 6
N663512-3262239	**Pencil probe** unshielded Fe		2.835.01-3500	123 100 6
N663512-3262240	**Pencil probe** shielded Aust		2.835.01-4000	123 056 5
N663512-3285716	**Pencil probe** shielded NFe		2.835.01-2000	129 299 4
N663512-3294621	**Pencil probe** shielded angledNFe		2.835.01-2600	122 885 4
N663512-3294622	**Pencil probe** shielded angled NFe		2.835.01-2100	122 880 3
N663512-3249122	**Bolt hole probe** unshielded NFe	6	2.835.01-2704	123 724 1
N663512-3249123	**Bolt hole probe** unshielded NFe	4	2.835.01.2700	123 722 5
N663512-3249124	**Bolt hole probe** unshielded NFe	7.5	2.835.01.2707	123 727 6
N663512-3249125	**Bolt hole probe** unshielded NFe	9	2.835.01.2710	123 730 6
N663512-3249126	**Bolt hole probe** unshielded NFe	12	2.835.01-2713	123 733 0
N663512-3249127	**Bolt hole probe** unshielded NFe	15	2.835.01-2716	123 736 5
N663512-3249128	**Bolt hole probe** unshielded NFe	17	2.835.01-2718	123 738 1
N663512-3249129	**Bolt hole probe** unshielded Fe	4	2.835.01-3700	123 660 1
N663512-3294623	**Bolt hole probe** unshielded NFe	5	2.835.01-2702	123 720 9
N663512-3294624	**Bolt hole probe** unshielded NFe	7	2.835.01-2706	123 726 8
N663512-3294625	**Bolt hole probe** unshielded NFe	8	2.835.01-2708	123 728 4
N663512-3294815	**Bolt hole probe** unshielded NFe	10	2.835.01-2711	123 731 4
N663512-3294816	**Bolt hole probe** unshielded NFe	11	2.835.01-2712	123 732 2
N663512-3294817	**Bolt hole probe** unshielded NFe	13	2.835.01-2714	123 734 9
N663512-3294818	**Bolt hole probe** unshielded NFe	14	2.835.01-2715	123 735 7
N663512-3294819	**Bolt hole probe** unshielded NFe	16	2.835.01-2717	123 737 3
N663512-3294820	**Bolt hole probe** unshielded NFe	18	2.835.01-2719	123 739 0
N663512-3294821	**Bolt hole probe** unshielded NFe	19	2.835.01-2720	123 740 3
N663512-3294822	**Bolt hole probe** unshielded NFe	20	2.835.01-2721	123 741 1
N663512-3294823	**Bolt hole probe** unshielded NFe	21	2.835.01-2722	123 742 0
N663512-3294824	**Bolt hole probe** unshielded NFe	22	2.835.01-2723	123 743 8
N663512-3294825	**Bolt hole probe** unshielded NFe	23	2.835.01-2724	123 744 6
N663512-3294826	**Bolt hole probe** unshielded NFe	24	2.835.01-2725	123 745 4
N663512-3294827	**Bolt hole probe** unshielded NFe	25	2.835.01-2726	123 746 2
N599512-3245250	**Probe cable**		2.835.01-9902	123 447 1
N663512-1983643	**Line-recorder cable**		2.835.01-9911	101 299 1
N615012-3299383	**Line-recorder cable**		2.835.01-9912	101 300 9
N663512-1711103	**Calibration standard Fe** RT[1] = 0.2/0.5/1,RB[1] = 0.1, 8x35x80 mm		2.164-501	110 012 2
N663512-1712407	**Calibration standard NFe** RT = 0.2/0.5/1,RB = 0.1, 8x35x80 mm		2.164-551	110 011 4
N663512-1991135	**Calibration standard Aust** RT = 0.2/0.5/1,RB = 0.1, 5x25x80 mm		2.835.01-9301	101 295 9

[1]RT = Crack depth, RB = Crack width

NTM recommendations for DEFECTOMETER probes

NTM	Chapter of the test procedure	Designation	Part No.	Order No.
A 300	53-13-00	**Pencil probe angled** shielded NFe	2.835.01-2100	122 880 3
A 300	53-14-01	**Pencil probe angled** 135° shielded NFe	2.835.01-2140	135 740 9
A 300	53-14-03	**Pencil probe angled** shielded NFe	2.835.98-2100	140 240 4
A 300	53-19-00/1	**Pencil probe angled** shielded NFe	2.835.78-6900	019 189 2
A 300	53-19-20/1	**Pencil probe angled** shielded NFe	2.835.07-6901	001 779 5
A 300	53-30-01	**Pencil probe angled** 135° shielded NFe	2.835.01-2140	135 740 9
A 300	57-25-11	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-25-12	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-33-10	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-51-11	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-51-11	**Pencil probe** angled unshielded NFe	2.835.01-2600	122 885 4
A 300	57-52-10	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-53-10	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-58-10	**Pencil probe angled** unshielded NFe	2.835.01-2600	122 885 4
A 300	57-58-10/1	**Pencil probe angled** unshielded Aust	2.835.01-4600	122 890 0
A 300	57-58-10/2	**Pencil probe angled** unshielded NFe	2.835.01-2600	122 885 4
A 300	57-58-11	**Pencil probe angled** unshielded NFe	2.835.01-2600	122 885 4
A 300	57-58-11/2	**Pencil probe angled** unshielded NFe	2.835.01-2600	122 885 4
A 300	57-58-12	**Pencil probe angled** unshielded NFe	2.835.01-2600	122 885 4
A 300	57-58-13	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-59-10	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-59-11	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 300	57-59-12	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 310	53-16-05/1	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 310	53-18-08	**Pencil probe angled** shielded NFe	2.835.07-6901	001 779 5
A 310	53-19-15	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 310	53-19-26/1	**Pencil probe angled** shielded NFe	2.835.01-6901	001 779 5
A 310	55-10-15	**Pencil probe angled** 135° shielded NFe	2.835.01-2140	135 740 9
A 310	55-10-65	**Pencil probe** unshielded NFe	2.835.01-2500	123 000 0
A 310	57-10-15	**Pencil probe angled** unshielded NFe	2.835.01-2600	122 885 4
A 310	57-52-00/1	**Pencil probe angled** shielded NFe	2.835.07-6901	001 779 5
A 310	57-52-01/1	**Pencil probe angled** shielded NFe	2.835.07-6901	001 779 5
A 320/321	53-31-54	**Pencil probe angled** shielded NFe	2.835.07-6901	001 779 5
A 320/321	53-41-12	**Pencil probe angled** 100° shielded NFe	2.835.01-2145	135 569 4
A 320/321	53-41-18	**Pencil probe angled** 100° shielded NFe	2.835.01-2145	135 569 4
A 320/321	53-41-56	**Pencil probe angled** shielded NFe	2.835.78-6900	019 189 2
A 320/321	53-41-71	**Pencil probe** shielded NFe	2.835.01-2000	123 033 6

Equivalent probes

This table contains probes from test procedures for which an equivalent FOERSTER probe exists.

Manufacturer	Designation	Equivalent FOERSTER probe	Part No.	Order No.
DASA	MBB 500-2	Pencil probe angled shielded NFe	2.835.07-6901	001 779 5
DASA	MBB 500-2B	Pencil probe angled shielded NFe	2.835.07-6901	001 779 5
DASA	MBB 500-3	Pencil probe angled 90° shielded NFe	2.835.99-2150 B=6, C=35	143 635 0

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