

The DefHi™ Probe

High-Definition Multiplexed Eddy Current Array Probe for Tubing Inspection



KEY FEATURES & BENEFITS

- One-Pass “Combination” Bobbin plus Array Probe
- Sizing of Circumferential Cracks and Axial Cracks¹
- Channel Multiplexer allows up to 128 Channels Resulting in Uniform Sensitivity
- Optimal Resolution with Oval-Coil Technology²
- U-Bend Capable, and Sensitivity Less Affected by Tube Expansion
- Convenient Analysis with Strip Chart for Bobbin and 2D/3D C-Scans for Array Imaging
- Rotating Probe Performance at Bobbin Speed in a Single Pass!

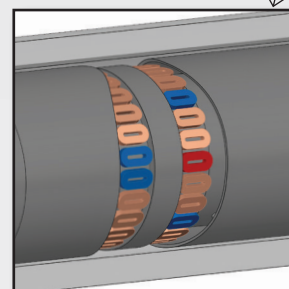
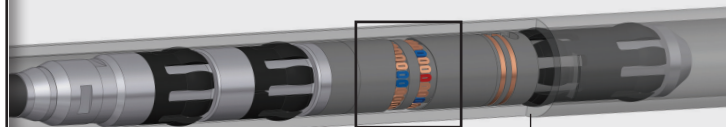
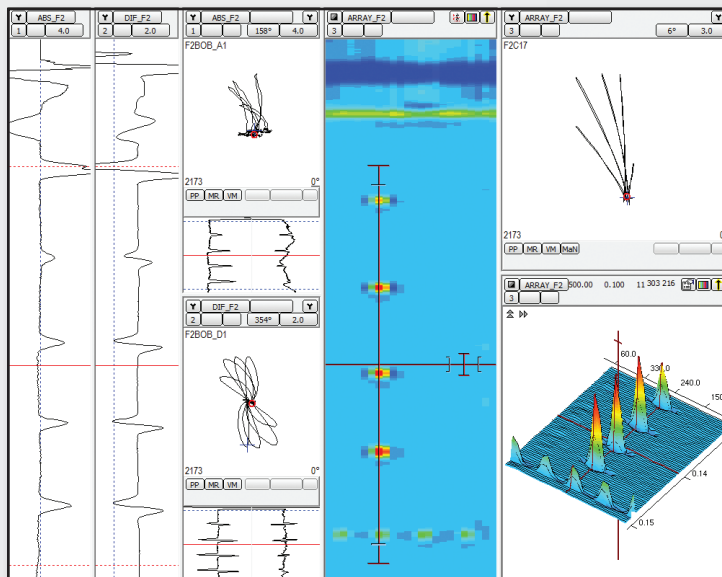
The DefHi™ probe is a high-definition, multiplexed eddy current probe designed to inspect non-ferromagnetic heat exchanger and condenser tubing. The probe uses electronic channel multiplexing to leverage, via timeslots, the physical inputs of an ECT test instrument and to accommodate up to 128 ECT channels. It is available in various configurations and sizes.

This probe overcomes many of the downsides associated with conventional tube inspection techniques. It allows detecting and sizing circumferential cracks, a major limitation of bobbin probes. Moreover, the probe's multichannel configuration retains the high acquisition speed of bobbin probes (much higher than rotating probes [RPC]) and still allows inspecting entire lengths of tube, including U-bends.

The DefHi probe provides a uniform and high-definition sensitivity for identification of defects in any orientation. This level of sensitivity cannot be achieved by other types of so-called “array probes”, categorized as *non-multiplexed* array probes, or even air conditioning (AC) probes. These probes are generally limited to a combination of bobbins and coils equal to the number of physical channels of the source ECT tester (usually 4 or 8), which results in suboptimal performance, simply because an insufficient number of coils cannot provide adequate definition.

Eddyfi's patent-pending DefHi probe thus represents the utmost in ECT tubing inspection performance.

¹ — Advanced options only
² — US Patent Pending — Eddyfi NDT, Inc.



1st row for circumferential defects (C) — All models
2nd row for axial defects (A) (optional) — Model 2

Specifications

Coil Technology	Differential and Absolute Bobbin + Transmit / Receive array
	- Eddyfi patent-pending Oval Pancake Coil Technology - 1 row, for Circ. only - 2 rows, for Circ. and Axial
Material	Non-ferromagnetic. Experience on 300-series Stainless Steel, Inconel™, Copper/Nickel, Brass, Titanium
Maximum Test Speeds	1 m/s (40 in./s)
Poly Material	9 mm (3/8") Strong Nylon, Premium Non-Kinkable
Calibration Standard	Modified ASME Standard
Connector	Ectane™ 160-pin for Ectane option Amphenol® / ITT Cannon 41 pins

Available sizes

TUBE OD	EDDY CURRENT CHANNELS		
	BOBBIN	CIRC.	AXIAL*
12,70 mm (1/2")	2	18	36
15,87 mm (5/8")	2	18	36
19,05 mm (3/4")	2	24	48
22,22 mm (7/8")	2	24	48
25,40 mm (1")	2	30	60
Larger sizes	Custom, available on request.		

* Advanced options only

DEFHI-TuV-wwwXX-Nzz

OPTION	MULTIPLEXER	BODY	CONFIGURATION			DIAMETER	FREQ. (kHz)	POLY LENGTH
	ECTANE/PROBE	RIGID/FLEX	BOBBIN	CIRCUM.	AXIAL			
1	E	R	B	C	-	Three-digit code represents probe diameter: e.g., 146 = 14,6 mm Contact us to verify availability of required diameters	HW: 4–60 kHz LF: 20–200 kHz MF*: 50–500 kHz	05: 5 m (16 ft) 15: 15 m (50 ft)
2	E	R	B	C	A			

* The maximum frequency is reduced to 400 kHz with 15 m cable.



info@eddyfi.com
eddyfi.com

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