

Industrial



Metal Shaft and Detachable Pencil Probes



**EVIDENT™**

# Introduction to Metal Shaft Probes

The small coils and high frequency range of these probes make them ideal for detecting surface cracks. Their angular design enables the inspection of areas with limited access. Probes are available in a variety of lengths, configurations of coils and drops, and connector options. The stainless steel shafts are available in either straight, 30, 45, or 90 degree angle tips. They are available in shielded absolute (Microdot connector) or bridge coil configurations (Triax Fischer/LEMO connector).

## Bridge Absolute Configuration Probes

### Advantages

- Shielded coil for higher resolution
- Detection of cracks in all directions
- Probe type is commonly used around the world
- Cost-effective option (competitive price)
- Generates a clean (noise-free) and strong signal

## Absolute Reflection Probes

Also known as driver pick-up or send-receive probes, absolute reflection probes provide a similar response to the bridge absolute configuration probe.

### Advantages

- Enables the detection of cracks in all directions
- Reduced drift over temperature variations
- Operates over a wide range of frequencies
- Available with stacked or concentric control and capture coils

# Straight Metal Shaft Probes

### Specifications

- Frequencies: 50–500 kHz, 200 kHz–1MHz, 1–3 MHz (Microdot only), 1–6 MHz (Triax only)

		50–500 kHz Probes		
Probe Length		Microdot Connector	Triaxial Fischer/LEMO Connector	
in.	cm	0.125 in. diameter	0.125 in. diameter	0.072 in. diameter
3	7.62	MP-30 (U8620053)	MTF-30 (U8623035)	MMTF-30 (U8623012)
4	10.16	MP-40 (U8620067)	MTF-40 (U8623038)	MMTF-40 (U8623019)
5	12.7	MP-50 (U8620108)	MTF-50 (U8623058)	MMTF-50 (U8623022)
6	15.24	MP-60 (U8620112)	MTF-60 (U8623059)	MMTF-60 (U8623023)]

Note: Other frequencies, connectors, lengths and PowerLink Technology available on request. Flexible options also available.

## 30° and 45° Angle Metal Shaft Probes

Metal shaft probes are used to inspect for surfaces breaking defects in an assortment of metals and alloys. These probes are designed with a small-diameter housing and coils developed for higher frequency inspections.

### 30° Angle, 0.5 in. (12.7 mm) Drop

		50-500 Khz Probes		
Probe Length		Microdot Connector	Triaxial Fischer/LEMO Connector	
		0.125 in. diameter	0.125 in. diameter	0.072 in. diameter
in.	cm	Shielded coil	Shielded coil	Shielded coil
3	7.62	MP305-30 (U8620058)	MTF305-30 (U8623251)	MMTF305-30 (U8616429)
4	10.16	MP305-40 (U8620059)	MTF305-40 (U8610529)	MMTF305-40 (U8623013)
5	12.7	MP305-50 (U8620061)	MTF305-50 (U8623037)	MMTF305-50 (U8623016)
6	15.24	MP305-60 (U8620062)	MTF305-60 (U8623338)	MMTF305-60 (U8623017)

Note: Other frequencies, connectors, and lengths available on request. Flexible options also available.

### 45° Angle, 0.3 in. (7.62 mm) Drop

		50-500 Khz Probes	
Probe Length		Microdot Connector	Triaxial Fischer/LEMO Connector
		0.125 in. diameter	0.125 in. diameter
in.	cm	Shielded coil	Shielded coil
3	7.62	MP453-30 (U8610629)	MTF453-30 (U8610530)
4	10.16	MP453-40 (U8620078)	MTF453-40 (U8623045)
5	12.7	MP453-50 (U8620080)	MTF453-50 (U8623046)
6	15.24	MP453-60 (U8620081)	MTF453-60 (U8610532)

Note: Other frequencies, connectors, and lengths available on request. Flexible options also available.

## 45° Angle, 0.5 in. (12.7 mm) Drop

		50-500 Khz Probes	
Probe Length		Microdot Connector	Triaxial Fischer/LEMO Connector
		0.125 in. diameter	0.125 in. diameter
in.	cm	Shielded coil	Shielded coil
3	7.62	MP455-30 (U8620085)	MTF455-30 (U8620274)
4	10.16	MP455-40 (U8620086)	MTF455-40 (U8623050)
5	12.7	MP455-50 (U8620094)	MTF455-50 (U8623052)
6	15.24	MP455-60 (U8620097)	MTF455-60 (U8623053)

Note: Other frequencies, connectors, and lengths available on request. Flexible options also available.



# Right Angle Metal Shaft Probes

## Right Angle 0.03 in. (0.76 mm) Drop

		50-500 Khz Probes	
Probe Length		Microdot Connector	Triaxial Fischer/LEMO Connector
		0.125 in. diameter	0.125 in. diameter
in.	cm	Shielded coil	Shielded coil
3	7.62	MP9003-30 (U8620119)	MTF9003-30 (U8623331)
4	10.16	MP9003-40 (U8620335)	MTF9003-40 (U8610538)
5	12.7	MP9003-50 (U8620252)	MTF9003-50 (U8623068)
6	15.24	MP9003-60 (U8620348)	MTF9003-60 (U8623070)

Note: Other frequencies, connectors, and lengths available on request. Flexible options also available.

## Right Angle 0.2 in. (5.08 mm) Drop

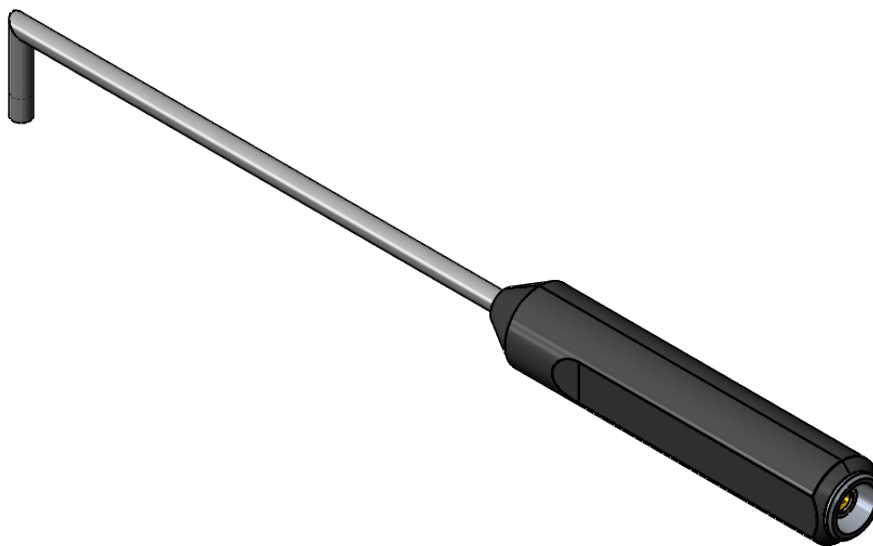
		50-500 Khz Probes		
Probe Length		Microdot Connector	Triaxial Fischer/LEMO Connector	
		0.125 in. diameter	0.125 in. diameter	0.072 in. diameter
in.	cm	Shielded coil	Shielded coil	Shielded coil
3	7.62	MP902-30 (U8620155)	MTF902-30 (U8623076)	MMTF902-30 (U8610490)
4	10.16	MP902-40 (U8620156)	MTF902-40 (U8623078)	MMTF902-40 (U8623240)
5	12.7	MP902-50 (U8620163)	MTF902-50 (U8623081)	MMTF902-50 (U8623025)
6	15.24	MP902-60 (U8620167)	MTF902-60 (U8623083)	MMTF902-60 (U8620381)

Note: Other frequencies, connectors, and lengths available on request. Flexible options also available.

## Right Angle 0.5 in. (12.7 mm) Drop

		50-500 Khz Probes		
Probe Length		Microdot Connector	Triaxial Fischer/LEMO Connector	
		0.125 in. diameter	0.125 in. diameter	0.072 in. diameter
in.	cm	Shielded coil	Shielded coil	Shielded coil
3	7.62	MP905-30 (U8620186)	MTF905-30 (U8610545)	MMTF905-30 (U8623031)
4	10.16	MP905-40 (U8620188)	MTF905-40 (U8610546)	MMTF905-40 (U8623242)
5	12.7	MP905-50 (U8620196)	MTF905-50 (U8623106)	MMTF905-50 (U8623032)
6	15.24	MP905-60 (U8620200)	MTF905-60 (U8623108)	MMTF905-60 (U8623033)

Note: Other frequencies, connectors, and lengths available on request. Flexible options also available.



# Ordering Information

## Numbering System Used to Order Standard Eddy Current Probes

MTF905-50-1-6M

Probe series Connector type Tip angle Drop at tip Overall length Frequency range

MTF-50-1-6M

Probe series Connector type Overall length Frequency range

## Glossary Used to Order Eddy Current Probes

### Probe Series and Connector Type

**MTF**= 0.125 in. diameter shaft—Triax Fischer/LEMO connector

**MP**= 0.125 in. diameter shaft—Microdot connector

**MMTF**= 0.072 in. diameter shaft—Triax Fischer/LEMO connector

**MMP**= 0.072 in. diameter shaft—Microdot connector

NOTE: Flexible shafts also available

### Tip Angle

- 30,45 and 90 degrees

### Drop at Tip

- 0.03, 0.2, 0.50

### Overall Length instead of Probe Length

Length in 1/10th of an inch

Ex. 50 = 5 inches

### Frequency

50–500 kHz is the standard frequency and is not displayed in part number. (Ex. MTF-50)

- 200 K–1 M = 200 kHz–1 MHz
- 1–3 M = 1 MHz–3 MHz (Microdot only)
- 1–6 M = 1 MHz–6 MHz (Triax only)

**Options:** Add FX to the tail of the part number for flexible copper shaft probes.

## Cables and Connectors

Microdot

9102894 (U8800041)

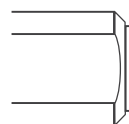
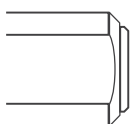
BCM-74-6 (U8800189)

Teflon Tape

Triax Fischer/LEMO

3303965 (U8901365)

9122244 (U8800091)



# Detachable Pencil Probes

Probes for stylus/stylard type surfaces are equipped with an adjustable collar to provide greater stability for difficult inspections. These stylus/optical pen probes feature small coils and housing allows fixturing for simi and full automation inspections. They are often used to detect surfaces defects like, cracks, pitting and material conditions. They are available with absolute or differential coils in both bridge and reflection configurations. Shielded coils have an effective sensitive area of approximately .08 inch (2 mm) in diameter.

## Advantages

- Excellent for the detection of small defects
- Good stability on flat surfaces
- Available with POWERLINK™ technology
- Wide selection of frequency ranges
- Wide variety of coil configurations available

## Typical Applications

- Inspection through paint on aircraft rivets
- Inspection of the structure, unit, and engine of the aircraft
- Detection through paint in cracks by corrosion under stress in stainless steel and carbon steel
- Inspection of surface cracks in manufacturing and transport equipment

## Specifications

- Plastic housing
- Shielded sensors
- Triax Fischer/LEMO connector





Frequency Range	Shielded Coil Configuration	
50 kHz–100 kHz	P/50 kHz–100 kHz/A	9213407 (U8623157)
100 kHz–500 kHz	P/100 kHz–500 kHz/A	9213408 (U8623158)
500 kHz–1 MHz	P/500 kHz–1 MHz/A	9213014 (U8623149)
1 MHz–2 MHz	P/1 MHz–2 MHz/A	9213409 (U8623159)
2 MHz–4 MHz	P/2 MHz–4 MHz/A	9213410 (U8623160)

## Bridge Absolute Configuration Probes

### Advantages

- Shielded coil for higher resolution
- Detection of cracks in all directions
- Probe type is commonly used around the world
- Cost-effective option
- Generates a clean (noise-free) and strong signal
- Internal reference coils provide the best match to the test coil when using a Triax (Fischer) or POWERLINK™ connector

### Coil Configuration

A= Bridge shielded

## Reflection Configuration Probes

Also known as driver pick-up or send-receive probes, reflection configuration probes provide a similar response to the bridge absolute configuration probe.

### Advantages

- Available with stacked or concentric control and capture coils
- Enables the detection of cracks in all directions
- Withstands temperature variations
- Operates over a wide range of frequencies
- Provides a loud and noise-free signal

Frequency Range	Shielded Coil Configuration	
100 kHz–1 MHz	PR/100 kHz–1 MHz/A	9213420 (U8623170)
1 MHz–3 MHz	PR/1 MHz–3 MHz/A	9213421 (U8623171)

## Numbering System Used to Order Detachable Pencil Probes

# P/100kHz-500kHz/A

Probe series

Frequency range

Coil configuration

## Glossary Used to Order Detachable Pencil Probes

### Probe Series

P= Bridge  
PR= Reflection

### Coil Configuration

Standard configuration

### Frequency Range

Various frequency ranges

### Bridge

50kHz-100kHz, 100kHz-500kHz, 500kHz-1MHz, 1-2MHz, 2-4MHz

### Reflection

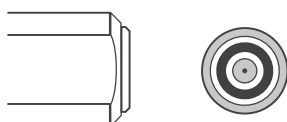
Reflection 100kHz-1MHz and 1-3MHz

## Cables and Connectors

### Cables and Connectors for the NORTEC 600 Series Flaw Detectors

Bridge Triax Fischer/LEMO Cable	9122244 (U8800091)
Replacement collar	1806882 (Q8400001)
V-notch collar	1823234 (U8990444)
Reflection cable	SPO-6687 (U8800538)

Triax Fischer/LEMO



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