ZETEC
THE INSPECTION ADVANTAGE

2018 PRODUCT CATALOG

FERROUS TUBING PROBES

Ferrous Tubing Probe Selector Matrix

Tube Material	Tube Type	ECT	ECA	IRIS	RFT	NFT	MFL
Non- ferromagnetic	Tube	✓	✓	✓	—	—	—
	Integral finned tube	✓	✓	✓	—	—	—
Low Ferromagnetic	Tube	○	○	✓	✓	✓	
	Integral finned tube	○	○	✓	✓	✓	✓
Ferromagnetic	Tube	—	—	✓	✓	✓	✓
	Integral finned tube	—	—	○	✓	✓	✓
	Aluminum finned tube	—	—	✓	—	✓	✓

Selection of NDT test method based on detection sensitivity

Discontinuity Sought	Sensitivity Criteria	ECT	ECA	IRIS	RFT	NFT	MFL
ID Pitting	Probability of Detection	✓	✓	✓	○	○	✓
	Sizing Capability	○	✓	✓	○	—	—
OD Pitting	Probability of Detection	✓	✓	✓	○	—	○
	Sizing Capability	✓	✓	✓	○	—	—
Axial Cracking	Probability of Detection	✓	✓	—	○	○	—
	Sizing Capability	✓	✓	—	—	—	—
Circumferential Crack	Probability of Detection	○	✓	—	—	—	○
	Sizing Capability	—	✓	—	—	—	—
ID Corrosion	Probability of Detection	✓	✓	✓	✓	✓	✓
	Sizing Capability	○	✓	✓	✓	—	—
OD Corrosion	Probability of Detection	✓	✓	✓	✓	—	○
	Sizing Capability	✓	✓	✓	✓	—	—
At Tubesheet	Probability of Detection	○	✓	✓	○	—	○
	Sizing Capability	○	○	✓	—	—	—

✓ The test method has proven results for the specific application

○ The test results obtained from the test method can be interpreted reasonably

— Test method is either not suitable for the sought application or non-reliable in terms of repeatability

Remote Field Testing (RFT) Probes

The Remote Field Testing (RFT) technique is a variation of the eddy current send/receive probe technique. The exciter coils are separated from the receiver coils by a distance equivalent to two or three times the tube OD. The receiver coils sense the flux lines that cross the tube wall twice. Remote field has an equal sensitivity to ID and OD indications, while the phase shift is directly proportional to wall loss. The remote field testing technique is used for the inspection of ferromagnetic tubing; such as carbon steel and ferritic stainless, as well as for the detection and sizing of wall thinning resulting from corrosion, erosion, wear, pitting, and baffle cuts.

Absolute and Differential Coil Detection

When using Zetec's RFT probes with the MIZ-200 or MIZ-28, RFT probes can inspect in absolute or differential coil mode. Absolute mode provides better detection of long gradual types of flaws. Differential mode is better for detection shorter or more abrupt flaws.

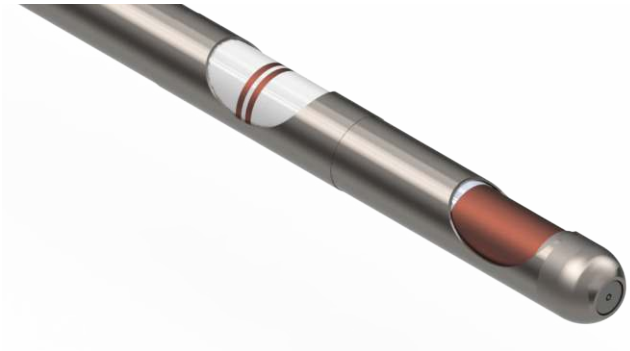
Frequency Selection for all RFT Probes

20 Hz to 200 Hz used for carbon steel thicker than 6mm
100 Hz to 1000 Hz used for carbon steel applications like SA214 or SA179 (most popular)
1 kHz to 10 kHz used for thin or lower permeability carbon steel like A-556
5 kHz to 30 kHz used for ferromagnetic stainless steel like SS439 (A-268) or SEA-Cure

RFT Probe Diameter Selection

Tube OD (Outer Diameter)	Recommended Rigid Probe Clearance. Tube ID – Probe OD	Recommended Flexible Probe Clearance Tube ID – Probe OD
0.5" (12.7mm)	0.06" (1.5mm)	0.1875" (4.75mm)
0.625" (15.9mm)	0.06" (1.5mm)	0.1875" (4.75mm)
0.75" (19.05mm)	0.075" (2mm)	0.1875" (4.75mm)
1" (25.4mm)	0.075" (2mm)	0.2" (5mm)
1.25" (31.75mm)	0.1" (2.5mm)	0.2" (5mm)
1.5" (38.1mm)	0.125" (3mm)	0.2" (5mm)
1.75" (44.45mm)	0.15" (4mm)	0.25" (6.35mm)
2" (50.8mm)	0.15" (4mm)	0.3" (7.6mm)
2.5" (63.5mm)	0.15" (4mm)	0.3" (7.6mm)
3" (76.2mm)	0.175" (4.4mm)	0.325" (8.26mm)
3.5" (88.9mm)	0.175" (4.4mm)	0.325" (8.26mm)
4" (101.6mm)	0.175" (4.4mm)	0.325" (8.26mm)

RFTLS Remote Field Testing Low Voltage Single Exciter



Standard Features

- Absolute and differential signal
- Wear resistant design

Probe Diameter 1mm Increments	Poly Length	Push Poly Black Polypropylene Poly size Probe Diameter		Frequencies	Connector
0.320" to 3.000" (8mm to 76mm)	65' (20m) 98' (30m)	Poly Diameter 5/16" (7.9mm) 21/64" (8.3mm) 3/8" (9.5mm) 1/2" (12.7mm)	Probe Diameter 8-10mm 11-12mm 13-25mm 26-76mm	20-200HZ 100-1000HZ 1-10KHZ 5-30KHZ	19 Pin Amphenol
Custom options are available for all items					

Supporting Instruments and Software

MIZ-200 with EddyNet or Velocity

MIZ-28 with adaptor 043A800-00 ZEC-ADP-MIZ-28-LV-RFT (allows for exciter coils to be individually excited)

RFTLD Remote Field Testing Low Voltage Dual Exciter

Standard Features

- Absolute and differential signal
- Wear resistant design

Probe Diameter 1mm Increments	Poly Length	Push Poly Black Polypropylene Poly size Probe Diameter		Frequencies	Connector
0.320" to 3.000" (8mm to 76mm)	65' (20m) 98' (30m)	Poly Diameter 5/16" (7.9mm) 21/64" (8.3mm) 3/8" (9.5mm) 1/2" (12.7mm)	Probe Diameter 8-10mm 11-12mm 13-25mm 26-76mm	20-200HZ 100-1000HZ 1-10KHZ 5-30KHZ	19 Pin Amphenol
Custom options are available for all items					

Supporting Instruments and Software

MIZ-200 with EddyNet or Velocity

MIZ-28 with adaptor 043A800-00 ZEC-ADP-MIZ-28-LV-RFT (allows for exciter coils to be individually excited)

Zetec holds ISO 9001 and ISO/IEC 17025 certifications

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