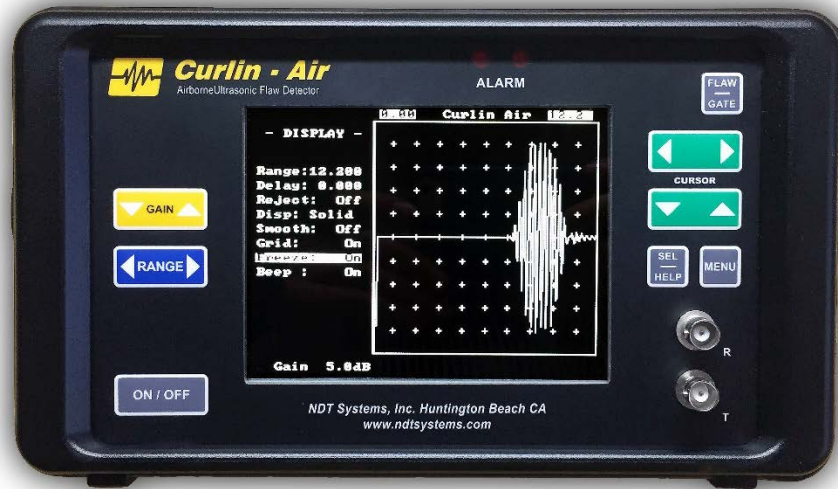


Curlin Air

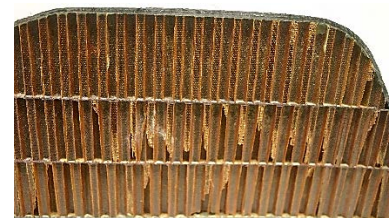
AIR-COUPLED COMPOSITE BOND TESTER



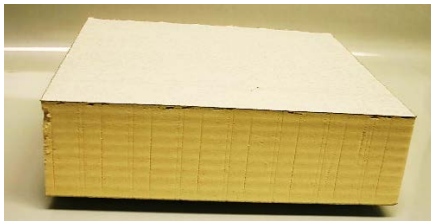
Carbon fiber skins with honeycomb core



Glass fiber skins with wood core



Multi-core sandwich



Metal skins with foam core



Plastic-to-foam welds



Foam

Introduction

The Curlin-Air is a non-contact, air-coupled and through transmission ultrasonic flaw detector. The very low transducer frequency of 50 kHz allows penetration and thus inspection of highly attenuative materials, which cannot be inspected with traditional ultrasonic equipment. Further, the instrument does not require any surface preparation and can penetrate up to 6 inches (150mm) of foam, honeycomb, wood or other materials with a high air/volume ratio and can detect potential anomalies.

Operating Principle

A transmitting and receiving probe are positioned on opposite sides of the material under test by means of a mechanical yoke which keeps the two probes both aligned and at constant distance from another at all times. This ensures that any signal fluctuation is caused by a change of the acoustic attenuation of the material under test, which in turn indicates a material anomaly. The instrument live display shows instantly is the sound path is interrupted by a defect in the material. Available flaw gates and alarms can be programmed and stored for each application.

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NDT Systems Inc., a Nova Instruments company

NOVA
INSTRUMENTS

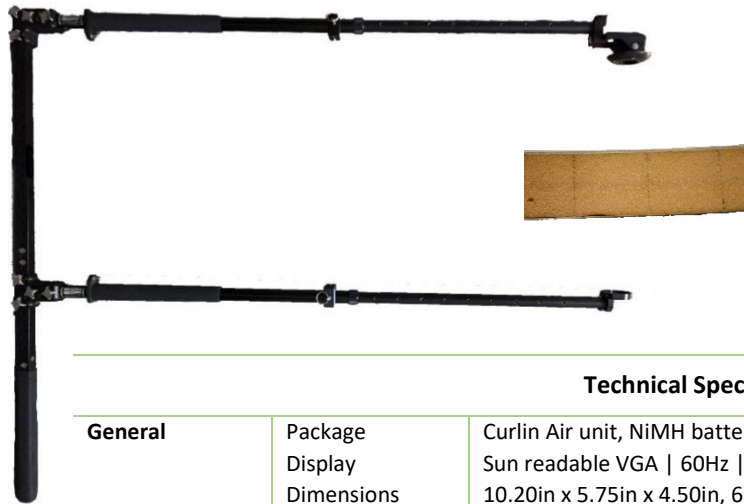
Curlin Air



AIR-COUPLED COMPOSITE BOND TESTER

Applications

Material Under Test	Industry	Application	Nature of Defect
Carbon-Fiber with honeycomb core sandwich	Aerospace	Control surfaces, thrust reversers, cargo doors	Skin-to-core disbonds, damaged core
Metal skin with foam core sandwich	Construction	Building safety: Construction of fire doors and walls	Voids in the foam core
Drywall	Construction	Drywall	Inspection for material integrity
Multi-core sandwich	Marine	Increased impact resistance and safety	Inspection for skin-to-core and core-to-core disbonds
Carbon-Carbon bond	Space	Heat shields	Delaminations, disbonds
Fiberglass skin with foam core	Leisure	Surfboards	Inspection for cracks, voids, crushed cores



Technical Specifications

General	Package	Curlin Air unit, NiMH batteries, AC charger (110-240V), User manual, COC, Pelican Case
	Display	Sun readable VGA 60Hz 640 x 480 pixels 4.55in x 3.4in (116mm x 86mm)
	Dimensions	10.20in x 5.75in x 4.50in, 6.3lbs 259mm x 146mm x 114mm, 2.9kg
	Power source	Field-replaceable rechargeable NiMH batteries (autonomy of 8 hours) or AC power
	Operating temp	32 F - 122 F (0 °C to 50 °C)
	Storage temp	-4 F - 140 F (-20 °C to 60 °C)
	Connector type	Dual BNC
	Units	Inch/mm
Transducer	Transmitter type	AT1 – Standard transmitter 1.5in (38mm) DIA
	Receiver type	AT1 – Standard receiver 1.5in (38mm) DIA AT2 – Special receiver 0.25in (6.4mm) DIA
	Frequency	50 kHz
	Display modes	RF, -HW, +HW, FW
Performance	Thickness range	1in – 120in (0.025m to 3m) in air
	Velocity range	0.005 in/μs – 0.750 in/μs (0.13 to 19.05mm/μs)
	Delay range	0in to 199in (0m to 5.05m) in air
	Pulse length	1 – 25 adjustable cycles in tone-burst
	Gates	Fully adjustable amplitude or distance gates
	Gain	0 to 115dB
	PRF	6 – 125 Hz
Storage	Bandwidth	Narrow or Wide
	Alarm	Visual and audible alarm modes
	User setups	Up to 50 user setups or screen shots

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