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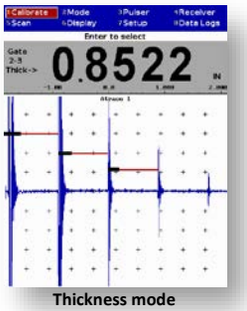
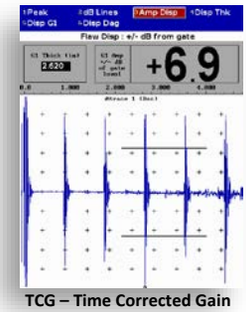
# Raptor

NDT Systems
Worldwide Excellence In Ultrasonics

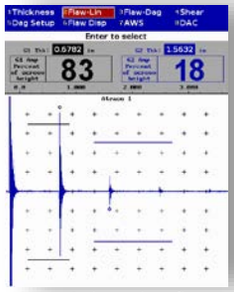
**PRECISION ULTRASONIC FLAW DETECTOR**



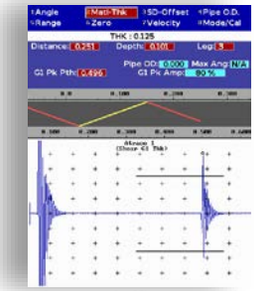
Thickness mode

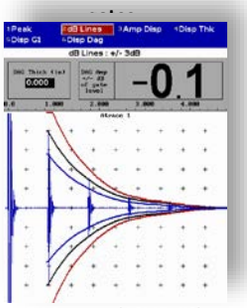


TCG – Time Corrected Gain

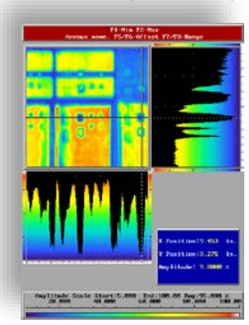


Linear independent flaw


Shear mode (flat + curved)



DAC curves (ASME, JIS)


C-Scan + post-processing


## Introduction

The Raptor is a high-speed flaw detector, a high-resolution thickness gauge and a versatile and unique imaging system – all in one handheld instrument. B- and C-scan imaging has never been this easy to generate, and helps reducing inspection time along with easy result interpretation.

## Applications

- High-end ultrasonic flaw detection
- C-Scan imaging capabilities
- Metals, plastics, composites, glass, rubber
- Corrosion mapping from tubes to pressure vessels
- Storage tanks and boilers glass inspection
- Weld inspection per AWS D1.1/1.5 code
- Investment castings turbine blade inspection

## Key features

- Spike or Square tunable wave pulser
- 0.5 MHz - 30 MHz receiver
- 25Ω - 375Ω (8 damping levels)
- 10Hz - 5000Hz PRF for high-speed scanning
- Sun readable full VGA display 640 x 480
- 8 hours of battery autonomy
- DAC/TGC incl. JIS, ASME, ASME-3 compliance
- Shear mode for flat or curved surfaces (CSC)
- AWS calculations as per D1.1/1.5 code
- Imaging view: B/C-scan, spreadsheet, 3D, histogram
- SplitScan view: Display A-Trace and B- or C-scan
- 2GB built-in and 2GB external/removable storage
- Windows based RAPWIN software for post-processing
- Quick and direct access to submenus with F1-8 keys
- Rugged aluminum case with rubber end caps

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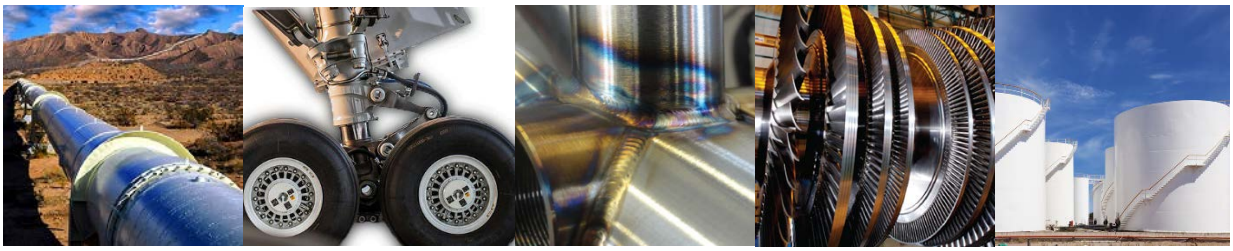
**PRECISION ULTRASONIC FLAW DETECTOR**



| | | | | |
|---|---|---|---|---|
| **General** | Package | Raptor unit, Li-Ion battery, AC charger (110-240V), User manual, COC, Pelican Case | | |
| | Display | Sun readable VGA \| 60Hz \| 640 x 480 pixels \| 3.4in x 4.55in (86mm x 116mm) | | |
| | Dimensions | 5.75in x 9.5in x 3.0in, 5.6lbs \| 146mm x 241mm x 76mm, 2.54kg | | |
| | Power source | Field-replaceable Li-ion battery (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 | | |
| **Transducer** | Type | Single and dual element \| Contact, Delay, Immersion, Shear, Through-transmission | | |
| | Frequency | 0.5 MHz - 30 MHz | | |
| **Performance** | Resolution | 0.0001 in (0.0025mm) | | |
| | Velocity | 0.0010 in/us - 1.0000 in/us | | |
| **Gates** | Thickness gates | IP-1st, 1st-2nd, 2nd-3rd \| IP blocking, IF blocking, IF-1st blocking, 1st–2nd blocking | | |
| | Linear flaw gates | 2 independent linear gates \| +- dB from gate, % of FSH, % of gate level | | |
| | DAC flaw gates | DAC curve (20-point) \| +-3dB lines (JIS) \| +-6dB lines (ASME) \| -6/-14dB (ASME 3) | | |
| | Alarm types | Auditable and visual \| Thickness high, low, both \| Amplitude higher, lower | | |
| **Modes** | TCG mode | TCG (Time Corrected Gain) available in all modes \| automatic or manual setup | | |
| | Shear wave mode | Flat plate or pipe (CSC - Curved Surface Correction) \| All gate types available | | |
| | AWS-code mode | AWS D1.1/1.5 calculations (A, B, C, D values automatically calculated) | | |
| **Pulser/Receiver** | Pulse type | Spike or Square tunable wave pulser | | |
| | Pulse width | 20ns - 10.000ns (square pulse mode only) | | |
| | Pulse volts | 50 to 450V | | |
| | PRF | 10Hz - 5000Hz | | |
| **Receiver** | Gain | 0 - 100dB (up to 0.1 increments) | | |
| | Damping | 25Ω - 375Ω (8 damping levels) | | |
| | Tuning | BB, 0.5 MHz, 1 MHz, 2.5 MHz, 5 MHz, 10 MHz, 15 MHz | | |
| | Bandwidth | Narrow or Wide | | |
| | Display modes | RF, +HW, -HW, FW | | |
| **Storage** | Internal | 2GB | | |
| | External | 2GB SD Card (included) | | |
| **Connectivity** | PC Software | Windows based RAPWIN software for imaging analysis (included) | | |
| **Imaging** | Scan type | Time or position encoded B-Scan, position encoded C-Scan | | |
| **Scanners** | Manual scanners | Armadillo (1-D)<br>StringScan 18x18, 24x24<br>SlideScan | Motorized Scanners | CrosScan<br>RCA-10, 18<br>Tunnel Scan I, II, III |
| | Customized scanners | NDT Systems has been involved in many one-off customized scanning solutions | | |

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**www.NDTSystems.com**

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