

RailTek

Digital Ultrasonic Flaw Detector for Rail Weld Joint



Professional Rail Weld Inspection

Small Size

Easy Operation

Real-time Cineloop

SIUI



Portable, Easy-to-Use, Reliable

— New Generation Ultrasonic Flaw Detector for Rail Weld Joint

The RailTek ultrasonic flaw detector for rail weld joint is the latest digital portable ultrasonic rail testing machine with powerful function and easy operation, which is the first choice for rail weld joint inspection.

Compact & Portable: The whole unit weight (battery included) is approx 1.4kg, suitable for aloft and field work.

B Scan Mark Function: This function can automatically mark alarm signals on the rail weld joint cross section on B scan image.

Easy Operation: There are just a few concisely-defined keys, easy to be operated with only one hand.

Super-low Consumption: The Li-polymer battery can support up to 6-hour continuous operation.

Strong Performance: High defect inspection rate can satisfy precise rail joint inspection.

Dynamic Recording: Real-time Cineloop

Extendable Connectors



Superior Features



- Max. sampling rate 240MHz; Measurement resolution 0.1 mm.
- User-friendly report with quick label for defect properties, position and testing process, enabling easy post-analysis and determination.
- 20-500Hz PRF with 10 steps adjustable: avoid reverberation signals during flaw detection.
- B scan images can be acquired by scheduled scanning.
- Measure crack height by edge peak echo method and image freeze function.
- The DAC curve works with echo compare function, making echo quantification of different distances and amplitudes more convenient.
- 5.7" high brightness TFT LCD.
- Different color schemes can meet the requirements of different application environments and habits.

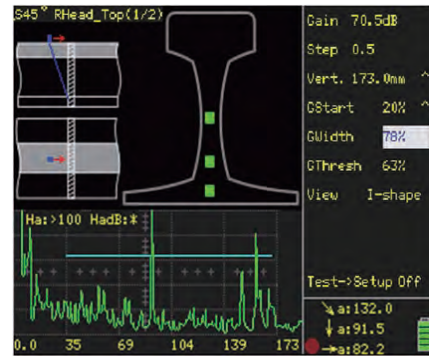
Application Examples

Single 70° Angle Probe



- Use primary wave to scan rail tread and rail side for making DAC curve on No.1-5 SDH in B area of GHT-5 calibration block with single 70° angle probe.
- Rail head inspection.

Single 45° Angle Probe



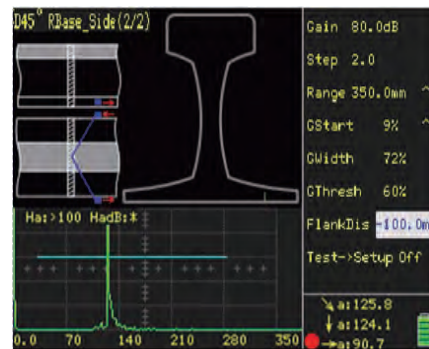
- Use primary wave to scan forward and reverse from rail tread to rail waist with single 45° angle probe.
- Rail inspection from rail head to rail foot.

Tandem Dual-Element Angle Probe



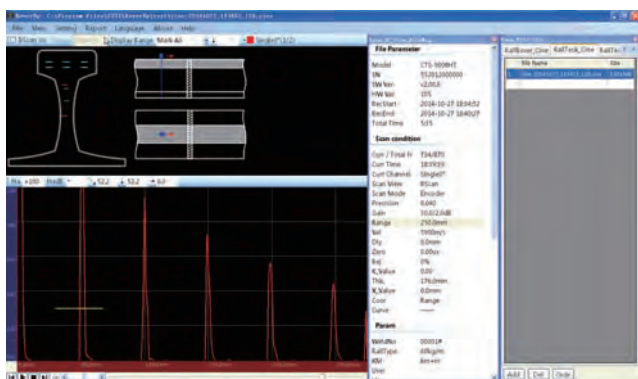
- Use a pair of tandem placed 38° angle probes with a crawler to scan the rail waist.
- Echoes from flat bottom holes in GHT-1 calibration block.

Dual 45° Angle Probe



- Use a pair of 45° angle probes to scan each side of the rail foot and rail head.
- An echo from No. 5 FBH in GHT-1a calibration block.

PC Software



On-site Application



| Function | Unit | Specifications |
|--|--------------|---|
| Testing Index | | |
| Attenuator Error | dB | Every 20dB \pm 1dB |
| Vertical Linearity Error | % | \leq 3 |
| Dynamic Range | dB | \geq 32 |
| Horizontal Linearity Error | % | \leq 0.5 |
| Pulser | | |
| PRF | Hz | 10 steps (20-500Hz adjustable but subject to detection range, material velocity, pulse shift and probe delay.) |
| Damping | Ω | Low /High, 2 steps (1000 /50) |
| Receiver | | |
| Operating Frequency Range | MHz | 0.5-8 |
| Reject | % | 0 ~ 80 |
| Gain Adjustment | dB | Range: 0 ~ 110; Adjustable steps: 0.5 / 2 / 6 / 12 |
| Measurement | | |
| Detection Range | mm | 0 ~ 13000 (Longitudinal wave in steel) |
| Pulse Shift Range | mm | -10 ~ 1000 (Longitudinal wave in steel) |
| Auxiliary Function | | Coordinate switch(sound path/depth/horizontal), freeze, auto gain(40%-100%, step:10%), peak envelop, wave compare, zoom, gate expansion, screen shot, adjustable filtering, cinelooop, wave filling, rail type selection(38/43/50/60/70 kg/m), weld I-shape mark(auto/manual), B scan image |
| Angle Measurement | | Measure probe angle |
| Material Velocity | m/s | 400 ~ 15000 |
| Probe Zero | μ s | 0 ~ 200 |
| Auto Calibration | | For calibrating material velocity and probe delay. Calibration mode: Velocity and Zero |
| DAC Curve | | For making, setting and applying DAC curves. |
| Gate | | |
| Gate | | Gate Start: 0~109% Gate Width: 1~109% Gate Thresh: 10~90% |
| General Technical Specification | | |
| Display Screen | | 5.7" high brightness TFT LCD, 320×240 pixels |
| Storage | | 500 data sets, including system setup, detection state, echo figures, etc. |
| Power Supply | V | 12DC (external power supply); 7.4 (battery) |
| Battery Operating Time | h | \geq 6 (Backlight brightness dependent.) |
| Operating Temperature | $^{\circ}$ C | -20 ~ +50 |
| Weight | kg | Approx. 1.4 (including battery) |
| Dimension | mm | 152 × 240 × 68 (W×H×L) |

SIUI

Shantou Institute of Ultrasonic Instruments Co., Ltd.

Add: #77, Jinsha Road, Shantou 515041, Guangdong, China

Tel: +86-754-88250150 Fax: +86-754-88251499

E-mail: siui@siui.com Website: <http://www.siui.com>

