

Automated Rail Inspection System

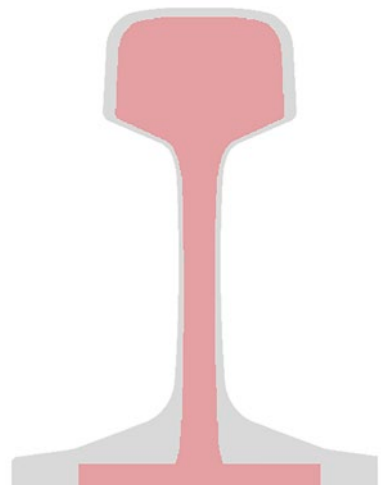


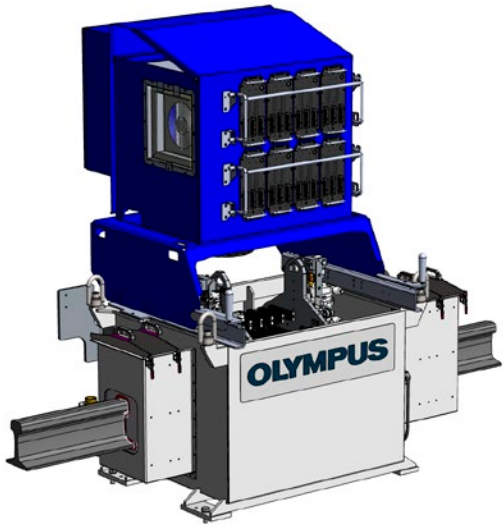
Train rails are manufactured in different weights and shapes for high-speed, heavy-duty, tramway, and crane applications, but all are made with high-quality steel. To withstand the tremendous stress caused by repeated use, the head, web, and foot sections' structural integrity is validated using automated ultrasonic testing.

Olympus' automated in-line Rail Inspection System (RIS) is built to comply with and exceed the international standards used in rail manufacturing. The RIS solution uses ultrasonic phased technology probes integrated into fully automated testing systems to meet stringent requirements for volume inspection.

Following the international standard, the RIS inspects more than 70% of the head, 60% of the web, and a section of the foot. The RIS can detect typical defects such as:

- **Volumetric defects**— flat-bottom hole (FBH) ≥ 1.6 mm (0.06 in.)
- **Subsurface defects**— longitudinal-oriented notch that's perpendicular or inclined to the bottom of the foot (short edge ≥ 0.5 mm (0.02 in.) deep \times 12.5 mm (0.5 in.) long)





RIS automated turnkey solution benefits:

- Phased array technology provides
 - Optimised volume coverage
 - Automatic acoustic configuration set up
 - Flexibility and scalability
 - Fast changeover time between profile geometries
- Floating head design to handle rail tolerance variations
- Bubble-free immersion tank
- Easy-to-use, operator-oriented software
- Low maintenance

System Performance

| | | |
|--|------------------------------|---|
| Standard Product Range | Profiles | High speed, heavy duty, tramway, and crane |
| | Cross section (W x H) | Up to 200 mm x 220 mm (7.9 in. x 8.7 in.) |
| | Speed | Up to 2 m/s |
| | Coverage | PA: 70% head, 60% web, and part of the foot |
| Data Presentation | Real-Time Inspection Results | C-scan, A-scan, B-scan, and alarms |
| Inspection Modes | Typical Inspection Modes | Longitudinal and shear waves |
| Detection Capabilities for Typical Reference Defects | Repeatability | Flat-bottom hole (FBH) > 1.6 mm (0.06 in.) at +/- 3 dB Surface defects (ECA) (L x W x D): Notches 12.7 mm x 0.4 mm x 0.5 mm (0.5 in. x 0.016 in. x 0.02 in.) at +/- 3 dB |
| | Standards | JIS, AREMA, UIC, BS, GB, GOST, IRS |
| Reporting and Data Storage | Report Types | Inspection, calibration, and calibration-check user-configurable reports |
| | Storage | Real-time database inspection data storage |

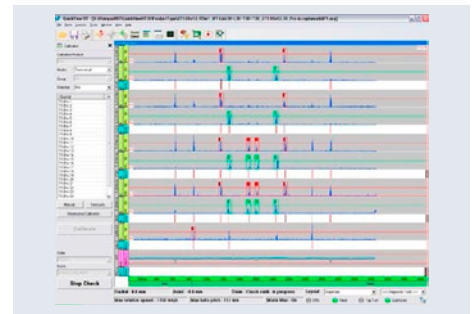
This solution is powered by



QuickScan™ Acquisition Unit



Olympus' Phased Array Probes



QuickView™ Software

OLYMPUS SCIENTIFIC SOLUTIONS AMERICAS CORP.
is certified to ISO 9001, ISO 14001, and OHSAS 18001.

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