

# NRS260 PRIME Ultrasonic Rail Flaw Detection Vehicle



## Key Features

- Proprietary wheel probe design, including XL9-11, Sweeper, and Tracer wheels for **100% rail head and web inspection coverage** as well as base detection
- Enhanced side-looking transducers for vertical split head (VSH) detection
- Optimized detection of transverse defects under sub-surface shelling conditions
- Dedicated gage corner defect detection
- Patented enhanced pattern recognition and defect classification
- Forced operator acknowledgment of all anomalies
- Fully integrated operating system with redundant data collection and storage
- GPS tagging of car movement and defect location, to the thousandth of a mile
- Testing speeds up to 30 mph (50 km/h) under optimal rail conditions

## Additional Advantages

- Full-size 4 passenger DOT rated, high roof vehicle for greater operator comfort
- Full height pass through between front truck cab and rear body to allow all passengers to exit from rear of vehicle and onto center of track during rail testing/inspection
- Increased electrical system capacity, eliminating auxiliary gen-sets and providing greater reliability and quieter operation
- 23,000lbs GVW does not require special CDL for driver



## Top-of-the-Line Ultrasonic Rail Flaw Detection Vehicle

Minute, internal flaws in rail, invisible to the naked eye, can result in sudden, catastrophic failure. Nordco's NRS260 PRIME ultrasonic rail flaw detection (RFD) vehicle finds unseen defects using the most sophisticated technology available, giving railroads an opportunity to take corrective action before disaster strikes.

The Nordco NRS260 PRIME is fully self-contained and ready to operate on all types of rail. Includes space for four passengers while maintaining ease of maneuverability on and off the track without the need for CDL. With the ability to perform either stop-and-verify or continuous testing, the Nordco NRS260 PRIME with its low maintenance / maximum up-time reliability helps railroads increase inspection frequency while minimizing on-track time.

## Digital, high-speed data system

Nordco's NRS260 PRIME features a 48-channel digital signal processing system allowing real-time sequential data processing, superior signal-to-noise ratios, and higher testing speeds with fewer false positive test results. The system is designed to allow for easy upgradeability as technology advances. With a Nordco NRS260 PRIME you can be assured that potentially dangerous defects are not being overlooked.

## Pattern recognition and defect analysis

Nordco's NRS260 PRIME Rail Flaw Detection Vehicles include the following key features:

- **Pattern recognition defect classification** - Incorporates artificial intelligence to recognize common rail conditions, as well as recognize and classify defects.
- **Off-Line Reviewing Software** - All test data is tagged by a precise encoder signal and further referenced to the onboard GPS system. This allows for off-line reviewing and developing comparison histograms over multiple tests to monitor rail condition and changes over time.

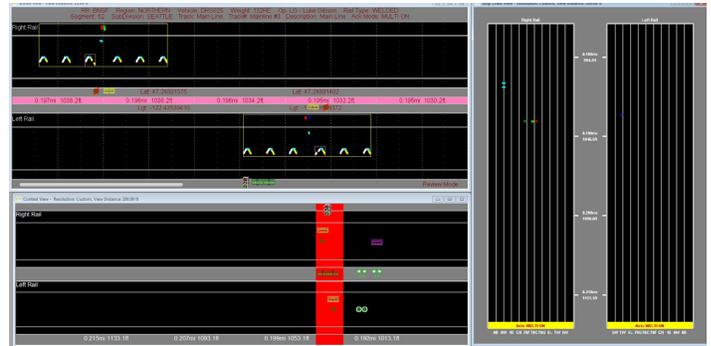


## Product Specifications

Category	Specification	Value
<b>Flaw Detection Technology</b>	Test Speed	Up to 30 mph (50 km/h) under optimum rail conditions. Slower speeds may be required through switches.
	XL9-11 Wheel	9" Rolling Search Unit featuring 11 independent transducers for full coverage of the rail head, web and loss of base. Field and gage side looking transducers for vertical split head detection.
	Sweeper Wheel	9" Rolling Search Unit optimized to detect sub surface shelling and transverse detail fractures.
	Tracer Wheel	6.5" Rolling Search Unit optimized for detection of small gage corner defects.
<b>General</b>	Gross Vehicle Weight	23,000 lbs (10.5 t)
	Dimensions	Width: 9'-6" (3.0 m) with extended mirrors; 8'-8" (2.7m) with collapsed mirrors Height: 12'-3" (3.8 m) on highway Length: 32'-6" (9.9 m) with rear stairs in folded up position
	Hi-Rail Gear	14" (356 mm) wheels
	Operating Conditions	-20°F to 110°F (-29°C to 43°C), all weather
<b>Capacities</b>	Couplant	150 gal (568 l)
	Fuel	100 gal (379 l)
	Crew	4 passenger Crew Cab with DOT rated passenger seating
<b>Engine</b>	Type	6.7L Diesel
	Power	250 HP @ 2400 RPM

### Advanced Software Capability

- Multiple System Views: Strip Chart, B-Scan
- Independent Channel Settings
- Automatic Gain Control
- Time Corrected Gain (TCG)
- Syntactic Pattern Recognition to identify & classify defects
- Adaptive Learning System for future defect additions
- Audible & Visual alarms
- Preloaded rail data (rail profile, system settings)



### XL9-11 Rolling Search Unit

Nordco's XL9-11 wheel probe includes eleven ultrasonic transducers:

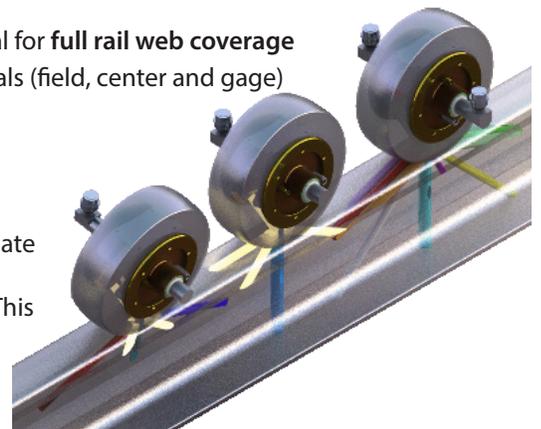
- One zero-degree crystal for both **web coverage** and **base detection**
- One 37.5-degree forward-facing crystal and one 37.5-degree rear-facing crystal for **full rail web coverage**
- Three 70-degree forward-facing crystals and three 70-degree rear-facing crystals (field, center and gage) for **full head coverage**

### Sweeper Rolling Search Unit

Nordco's Sweeper wheel probe is optimized to detect transverse detail fractures beneath sub-surface shelling where field or gage surface conditions are inadequate for traditional detection. One zero-degree transducer and four proprietary shear wave angle transducers focus on head inspection in the field and gage corners. This enables the detection of small transverse defects in these compromised surface zones of the rail head.

### Tracer Rolling Search Unit

Nordco's Tracer wheel probe is oriented at a cant angle, optimized to inspect worn gage corners that cannot be sufficiently inspected with perpendicular oriented RSUs due to contact loss. A set of shear wave transducers detects defects in the gage volume of the rail head. A zero degree transducer is used to detect compound features of gage defects that are typically caused by WRI mismatches.



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