

## General Specifications

Testing method	Pulse echo method
Test modes	B-Scan (B-Mode) / A-Scan (A-Mode) : selectable
Search unit (Probe)	Standard specification : 4 probes ; Straight beam (0°), Angle beam (±45° Front and Rear, +70° Front) Optional specification : 5 probes ; Straight beam (0°), Angle beam (±45° Front and Rear, ±70° Front and Rear)
Primary flaws detected	0°, 5MHz ; Shelling, Horizontal fissure in rail head, Horizontal fissure in rail web, Horizontal fissure at bolt hole, Corrosion at bottom of rail ±45°, 2MHz ; Transverse fissure in rail web, Transverse fissure at bolt hole, Transverse fissure in rail base ±70°, 2MHz ; Transverse fissure in rail head
Rail type inspected	Standard specifications applicable to rail head widths 69mm or less (e.g. JIS 60, 50T, 50N, 50, 40N, 37, 30, etc.) Non-standard specifications applicable to rail head widths greater than 69mm (i.e. UIC 54, 60 / AREA 132RE, 136RE / China 50, 60, 75 / PB43) For other types of rails, consult us.
Pulse repetition frequency (PRF)	1 kHz (B-Scan, A-Scan)
Scanning range of B-Scan	250 / 500 / 1000mm : selectable
Gain	1dB × 80 steps
Monitor (Display)	8.4 Inch high brightness color LCD
Number of stored images	Image files (BMP) : approx. 1000 Successive image files (3 images every second) : approx. 1 hour
Other functions	<ul style="list-style-type: none"> <li>• Rail bottom zoom display function for corrosion at the rail bottom</li> <li>• Distance data input function</li> <li>• Alarm function (lamp and buzzer) ; Operator notified by both buzzer and lamp when flaw is detected.</li> <li>• Caliper function for measuring detected flaw size</li> <li>• Remaining battery level display function</li> <li>• Post-processing software function</li> </ul>
Ambient temperature	0°C ~ +45°C [ Optional expanded range : -10°C ~ +55°C ]
Battery	Pb rechargeable battery (12 V, 12 Ah)
Battery charger	Input : AC100V ~ 220V Charging time : approx. 4 hours
Battery operating time	Approx. 5 hours
Water (Couplant) storage capacity	Approx. 10 liters Water consumption time : approx. 1 hour (varies according to probe configuration and rate at which water is dispensed)
Outside dimensions	L660 × W450 × H920mm
Mass	Main unit : approx. 18 kg (without water and battery) Battery : approx. 4.5 kg Storage case : approx. 15 kg

## Equipment composition

4-probe composition [Standard specifications]		5-probe composition [Optional specifications]	
Main unit with 4-probe mechanism	1	Main unit with 5-probe mechanism	1
Probes (0°, ±45°, +70°)	4	Probes (0°, ±45°, ±70°)	5
Battery	1 Model : PRD-BAT3		
Battery charger	1 Model : PRD-CHGR3		
Storage case	1 Made of aluminum		
Post-processing software	1 CD-ROM installation		
Instruction manual	2 ( for Main unit : 1 for Post-processing software : 1 )		

The contents of this publication are subject to change and improvement without prior notice.

# ULTRASONIC RAIL FLAW DETECTOR

## Rail Tester PRD-300



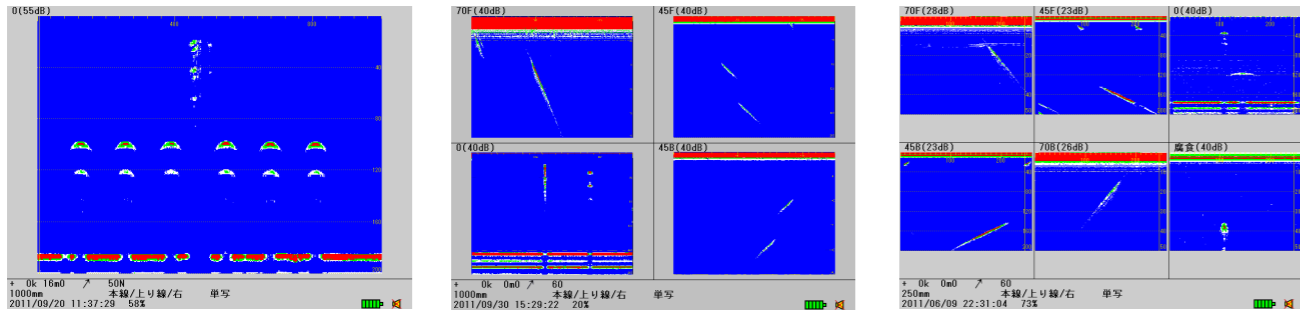
The new PRD-300 Rail Tester is the culmination of TOKYO KEIKI RAIL TECHNO's more than 35 years of experience and knowhow in ultrasonic flaw inspection for railways.

The PRD-300 builds on its popular predecessor - the PRD-100 Series which is used extensively in railway inspection and maintenance - and represents a comprehensive model change with major enhancements including expanded functions.

Playing a critical role in track maintenance, the new PRD-300 Rail Tester enables closer scrutiny and improves the efficiencies of rail inspections.

### Features

- The 8.4 inch high intensity color LCD display provides, in addition to the conventional single screen display, multiple 4-screen and 6-screen displays of flaw images scanned in B-Scan (cross-sectional image) and A-Scan (received waveform).



Single screen (selected single probe)      4 screens (standard 4 probes set)      6 screens (5 probes + bottom corrosion)

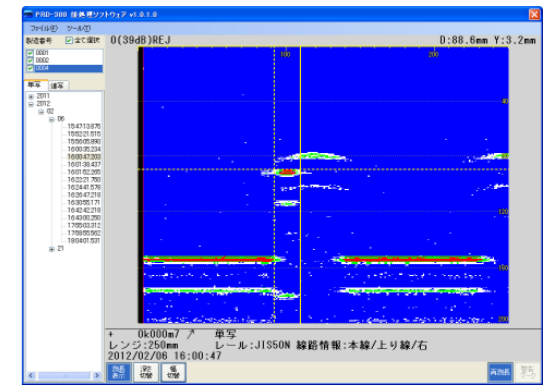
- A new -70° probe option is available in addition to the standard 4-probe set of 0°, ±45° and +70° probes. This enables a 5-probe configuration that is capable of detecting transverse fissures in the rail head which are deemed to propagate along the same direction of travel as the rolling stock, a feature that is especially effective in single track sections.



[ +70°, +45°, 0°, -45°, -70° ]  
Detecting unit with 5-probe arrangement

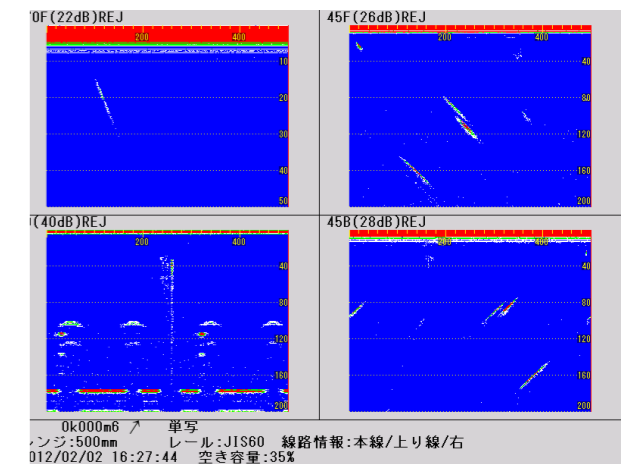
- A rail bottom zoom display function with the 0° vertical probe is standard equipment. This zoom display function can detect rail bottom corrosion due to electrolytic corrosion of rails inside tunnels and at crossings - pinpointing their location as well as providing quantitative data on the extent of corrosion.
- Flaw images that are stored in internal memory can be uploaded to office PCs by using USB flash memories. (Compared to the previous method which utilized images stored in the video recorder, image analysis is greatly simplified.)

- PCs installed with post-processing software (CD-ROM accessory) can display and playback flaw images. In addition, the PC can perform sizing measurements of flaw images which could previously only be done at the site. The post-processing software also simplifies generation of inspection work reports and record keeping.



Example of resizing of flaw images

Multiple screen display (example of 4-screen display)



(Upper left) Head transverse fissure  
(Upper right) Bolt hole fissure  
(Bottom left) Shelling (Squat)  
(Bottom right) Bolt hole fissure



Carrying/storage case



Note: Operational panel and screen indicators of export models are in the English language.