

Digital Ultrasonic Rail Flaw Detector

**RailRover**



**9 Individual Transmit/Receive Channels**  
**A & B Scan Display and Recording**  
**Self-Testing Function on Probes**  
**GPS Location System**  
**DAC on all Probes**

**SIUI**

# RailRover

## — New Generation Ultrasonic Rail Flaw Detector

The RailRover Digital Ultrasonic Rail Flaw Detector is the latest digital hand pushed ultrasonic portable rail testing machine. It has 9 channels on the machine and an independent channel for handheld confirmation testing of welds and the rail foot.

Other features include a GPS location system, internal memory for saving data and the ability to transfer data to a PC or laptop via micro SD card connection to allow simple, easy defect management.

### Superior Features

The RailRover has 9 individual ultrasonic transmit/receive channels for rail testing and an independent hand held channel for defect confirmation, sizing and manual inspection of the weld or rail foot.



Magnetic Foot Option



Encoder



### Main Specification



**Channels:** 9+1

**PRF:** 400Hz

**Detection Range:** 0-300mm

**Dynamic Range:**  $\geq 16$ dB (normal); 2-6dB (suppression)

**Horizontal Linearity Error:**  $\leq 0.5\%$

**Vertical Linearity Error:**  $\leq 3\%$

**Attenuation Range:** 10dB $\pm$ 1dB

**Gain Error:**  $\leq 1$ dB for each 12dB

**Working Voltage/Power:** DC12V@8W

**Operating Temperature:** -40 °C ~+50 °C

**Tank Capability:** 20 Litres

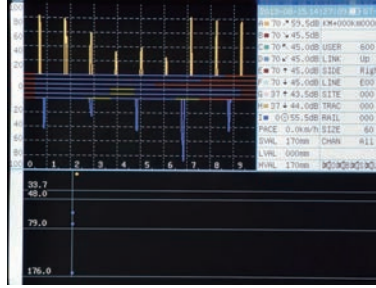
**Weight (dry):** 28kg

**Dimensions (L×W×H):** 750×350×800mm

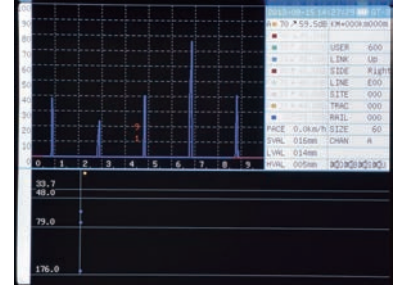
## Display Modes

Three modes (single A scan, multiple A scan and A+B scan) are available in RailRover. Press one button to switch freely among A scan and multiple A scan.

All modes have storage and recording function. The images can be replayed directly in the system and saved in micro SD card for storing and processing in a PC.



A+B Scan with 9 Channels



A+B Scan with Single Channel

## Memory and Review

RailRover can save up to 4GB data files. Each file includes data, time, operator information, defect location, rail size and distance.

Alternatively it can store infinite continuous recording using A or B scan format. Using a micro SD card, it can save data for up to six months of operation. The recorded information can be reviewed directly on site using the RailRover or transferred to a PC using the micro SD card. Software is supplied with the RailRover for the user to manage this data using a PC.

Rail Type	Rail From	Rail Head	Rail Height	Rail Noise	Rail Diameter
75	46.0	53.0	192.0	80.5	36.0
38	27.7	39.0	134.0	59.5	29.0
60	32.7	48.0	176.0	73.0	31.0
43	30.4	42.0	140.0	62.5	29.0
50	32.3	42.0	152.0	68.5	31.0

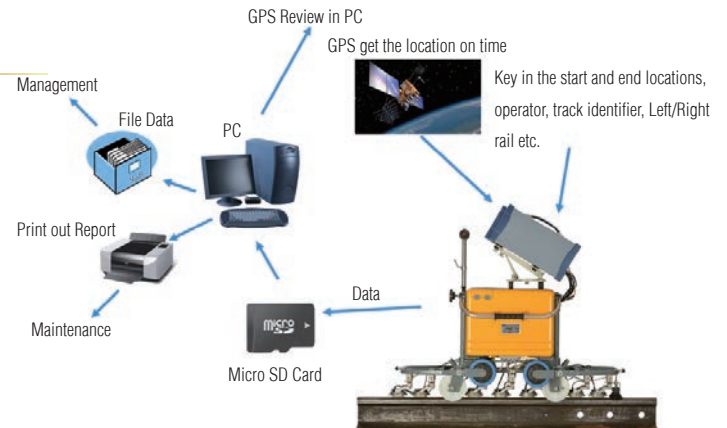
Rail Type Setup

	A	B	C	D	E	F	G	H	I
Probe Kind	30.2	30.2	30.4	30.2	30.2	30.2	30.2	30.2	30.2
Trace Delay	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Sound Range	250mm	250mm	250mm	250mm	250mm	250mm	250mm	250mm	250mm
Gatec Head	005	005	005	005	005	005	005	005	005
Gatec Tail	086	086	076	076	056	056	093	093	075
Gatec Head	X	X	X	X	X	X	X	X	X
Gatec Tail	X	X	X	X	X	X	X	X	X
Gatec Head	X	X	X	X	X	X	X	X	X
Gatec Tail	X	X	X	X	X	X	X	X	X

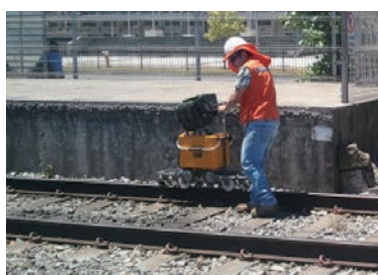
Channel Parameter Adjustment

## GPS Location System

RailRover can record the testing time, location, working time, speed and walking distance. All of this information can be recorded and downloaded to a PC for management. The information can be printed as a report for direct maintenance.



## On-site Application



Sample Defects Detected by RailRover

Function	Unit	Specification
<b>Testing Index</b>		
Attenuator Error	dB	10dB ± 1dB
Vertical Linearity Error	%	≤3
Dynamic Range	dB	≥16dB (normal); 2~6dB (suppression)
Horizontal Linearity Error	%	≤0.5
<b>Pulser</b>		
Transmission		Negative spike
PRF	Hz/ channel	400
Damping	Ω	500
<b>Receiver</b>		
Attenuation	dB	0~80, Step: 0.5
Bandwidth	MHz	1.6~3.6
A/D Sampling Frequency	MHz	50
Reject	%	25
<b>Measurement</b>		
Detection Range	mm	0 ~ 300
Auxiliary Function		GPS, missing inspection alarm, over speed alarm
Display Measurement Value		sound path, horizontal, depth
<b>Scan</b>		
Scan Mode		A/B
Imaging Wizard		Available
Trigger Mode		Encoder
Rail Type Range	Kg/m	20~80
<b>Gate</b>		
Gate		Gate Start: Full, Gate Width: Full, Gate Height: positive: 50%, negative: 30%
<b>Channel</b>		
Channel Number		9+1
Probe Port Type		BNC
Probe Port Number	pc	20
<b>Probe</b>		
Single 70°	pc	4
Dual 70°	pc	1
Single 37°	pc	1
0°+37°	pc	1
<b>Trolley</b>		
Tank Capacity	L	20
Probe Holder Number	pc	7
Encoder		Precision: 2.34mm, Move Mode: Manual Operation
<b>General Technical Specification</b>		
Display Screen		8.4" high brightness TFT LCD, 640×480 pixels
Peripheral Port		DC power supply, Micro SD, Ethernet, encoder, GPS module, hot key and probe ports.
Storage		4GB external storage card
Power Supply	V	Adapter: AC in 100~240; DC out 12, Lithium Battery: 11.4
Battery Operating Time	h	≥10
Operating Temperature	°C	-40 ~ +50
Weight	kg	Approx. 28 (Not include: couplant)
Dimension	mm	750×350×800 (W×H×L)

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