

RSM-SY8(C)

Ultrasonic Pile Integrity CT Imaging Tester

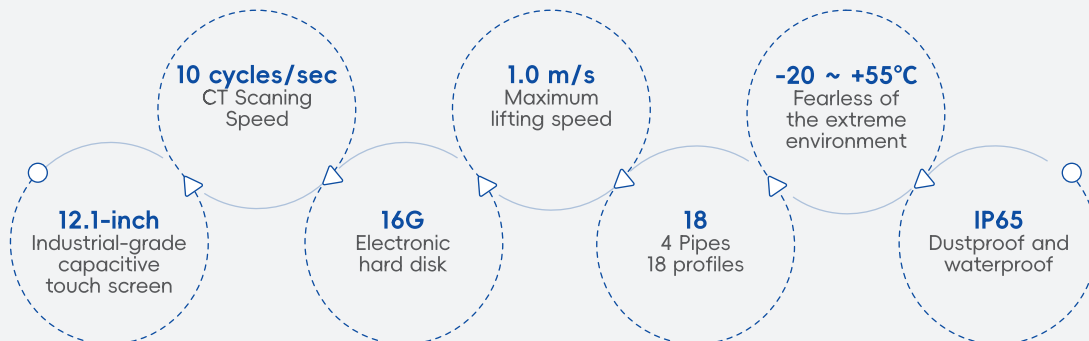


4 Pipes 18 Profiles, 3D pile tomography

— Application —

- Ultrasonic pile tomography detection by cross-hole method
- Ultrasonic pile integrity detection by cross-hole method
- Integrity detection of underground diaphragm wall by cross-hole method
- Detection of Inadequate Concrete Compaction and Voids
- Concrete crack depth detection
- Concrete strength detection by ultrasonic-rebound combined method
- Longitudinal wave velocity test of rock mass in geological investigation
- Detection of loosen zone of tunnel rock mass
- Test of dynamic and elasticity parameters of non-metallic materials

RSM-SY8 (C) Ultrasonic Pile Integrity CT Imaging Tester is a breakthrough in introducing tomography technology into the ultrasonic pile integrity detection by cross-hole method. It can cut the tested pile into 18 measuring lines at one time, and the 2D results can be fitted to a 3D pile foundation defect model through 3D modeling software. The testing result is more intuitive and efficiency.



– Technical Features



CT 3D Imaging

Equipped with professional pile foundation 3D CT imaging software, capable of generating various types of 3D dynamic images from test results.



Accurate Positioning

Real-time display of defect size, range, and specific location throughout the entire pile, providing crucial evidence for subsequent supplementary verification such as core sampling.



Efficient Testing

Tomographic imaging detection scanning speed is ≥ 10 cycles/second, testing 18 profiles in a single lift.



Precise Collection

Easy and quick connection of the automatic lift counting device, with a maximum lifting speed of up to 60 m/min. Minimum resolution for lifting depth is 1 cm.



New Wireless Depth Counter

Integrated wired and wireless functionality with wireless transmission over 8 meters.

30-hour long battery life with a Type-C charging port, supporting simultaneous use and charging with a power bank.



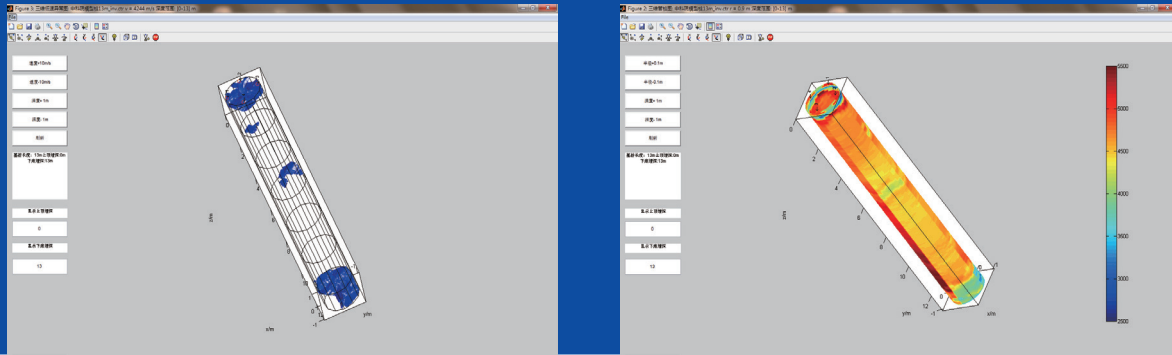
Newly Upgraded

Engineered plastic ABS+PC. Flame retardant material, high temperature resistant design; IP65 Dustproof and waterproof design, fearless of the extreme.

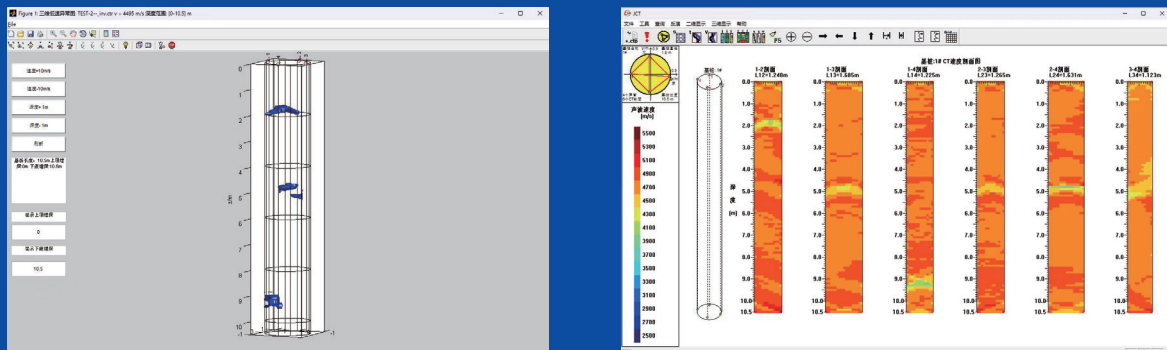
– Specification

RSM-SY8(C)			
Display method	12.1-inch true-color LCD screen Resolution: 1280×768 (adjustable backlight)	Gain accuracy	0.5dB
Operation mode	Capacitive touch	Frequency bandwidth	1 ~ 500kHz
Storage capacity	16G electronic hard disk	Acoustic amplitude accuracy	$\leq 3\%$
Signal acquisition method	Wired	Acoustic time accuracy	$\leq 0.5\%$
Data export method	USB	Receiving sensitivity	$\leq 10\mu V$
Depth counting method	Automatic counting	Intertrack crosstalk	$\leq 1/400$
Master control form	Low power embedded system Basic frequency: 1GHz Memory: 512M	Trigger	Signal trigger
Transmit channel	Four	Number of receiving channels	Eight
Number of profiles tested in a single lifting	18 profiles	Protection level	IP65
Scanning speed	CT tomography software: ≥ 10 cycles/sec Cross-hole method: ≥ 20 cycles/sec	Power supply mode	Removable lithium battery Battery capacity: 12000mAh Battery thickness: 9mm Battery life: $\geq 7h$
Sampling method	Synchronous self-transmitting and self-receiving	Shell	Engineering Plastic: ABS+PC
Sampling interval	0.1 ~ 200 μs	Operating temperature	-20 ~ +55°C
Recording length	0.5 ~ 4k	Dimension	340×275×62 mm
Transmit voltage	500V/1000V adjustable	Weight	3.0 kg (including lithium battery)
Dynamic range	$\geq 100dB$		
LIFTING DEVICE			
Connection method of lifting device	Wired / wireless	Minimum space between testing points	1cm
Wireless transmission distance	8m	Maximum lifting speed	1.0m/s
Wireless working hours	$\geq 30h$	Counting method	Double direction counting
Waterproof Rating	IP65	Charging Method	Type-C charging port, supports simultaneous use and charging with a power bank
Dimension	130×110×140 mm	Weight	1.5kg

3D Tomographic Software



3D Tomographic Software Interface

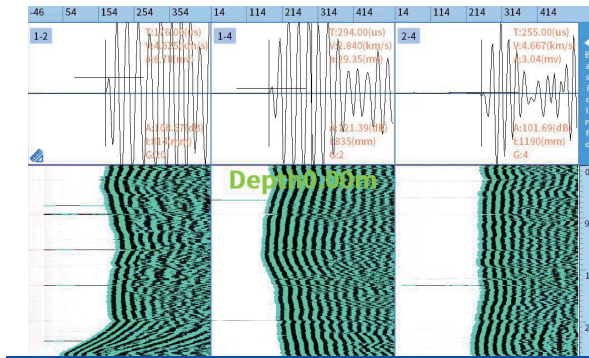


3D Tomographic Software Interface

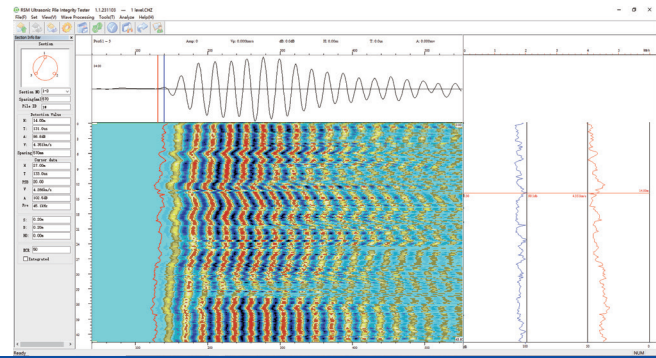
– Features

- ☒ The software can display a three-dimensional tubular slice chart, showing the changes in velocity values on the outside profile of the measured pile using a color map. The color map is then rolled and connected to form a tubular slice chart, vividly displaying the trend of velocity value changes in the pile body.
- ☒ The software can display a three-dimensional low-velocity anomaly chart, intuitively and realistically showing the position, size, and range of low-velocity anomalies. Users can manipulate the pile to rotate in any direction with the mouse, as well as zoom in or out on any part of the pile for a more three-dimensional display of anomalies.
- ☒ The software can display velocity contour maps, where the measured velocities of each profile are shown as color maps, and contour lines are drawn to create velocity contour maps, specifically displaying the range of velocity values at various positions in the pile.

Cross-hole Ultrasonic Software



Sonic-Logging Sampling Software Interface



Sonic-Logging Analysis Software Interface

– Features



The main operation interface displays the waveform curve of the measurement points, the full pile wave train chart, and the profile depth curve in a linked manner.



Allows switching between the wave train chart, data table, and grayscale chart at will.



The display ratios of profile velocity-depth curves, amplitude-depth curves, and PSD-depth curves can be adjusted freely.



Each measurement point's frequency spectrum can be observed individually, facilitating main frequency analysis.



Accurate algorithms for interpreting velocity and amplitude, with the option to interpret velocity and amplitude separately.



Supports the analysis and processing of oblique measurement and fan measurement data.



Features automatic pipe inclination correction, with pre- and post-correction data simultaneously displayable and printable.



Multiple output result styles are available, compatible with various report formats.



The output result headers can be customized, and custom header templates can be saved.



The wave train chart and depth curve chart can be output simultaneously on a single page report.



Supports multiple output modes, including image output, print output, Word file output, and Excel file output.



Capable of generating complete reports in batches.