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| <b>Product Name</b> | GAOTek Ultrasonic Welding Crack Flaw Detector   |
| <b>Product SKU</b>  | GAOTek-SFD-176  |
| <b>Product URL</b>  | <a href="https://gaotek.com/product/gaotek-ultrasonic-welding-crack-flaw-detector/">https://gaotek.com/product/gaotek-ultrasonic-welding-crack-flaw-detector/</a> |

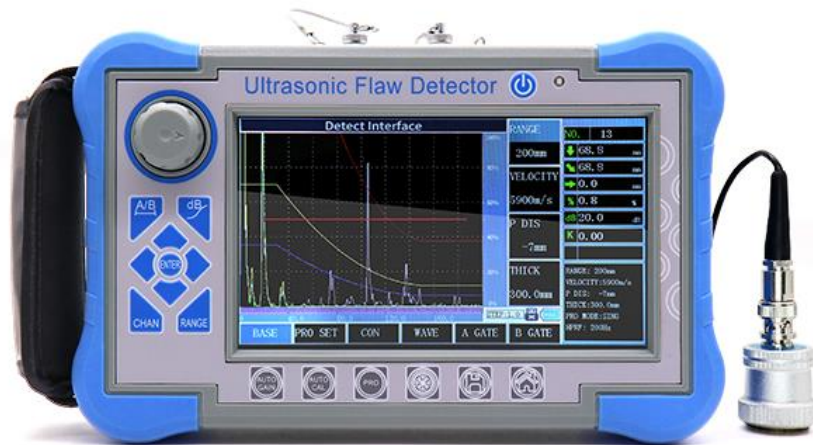
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## Introduction

Digital ultrasonic flaw detector is an advanced type, which is a touch screen, can quickly, easily, and without damage, accurately detect, locate, evaluate, and diagnose various defects inside the workpiece such as cracks, welds, pores, sand holes, inclusions, folding, etc. It has been applied for electric power, petrochemicals, boiler and pressure vessels, steel structures, military, aerospace, railway transportation, automobiles, machinery, and other fields. It is an essential instrument for the non-destructive testing industry.

## Features

- High-precision quantification and positioning to meet the requirements of near and far-distance detection
- The near-field blind zone is small and can meet the detecting requirements for small-diameter and thin-walled pipes.
- Auto calibration function: one-button auto-calibration, easy to operate, automatic test probe “P Delay”, “K value” and the velocity
- Automatic display of the defect echo position (Depth, Horizontal, Distance, Amplitude, dB)
- Switch three scales freely (Depth, Horizontal, Distance)
- Auto gain, peak envelope, and peak memory functions, which can improve detection efficiency.
- Automatically record the flaw detection process and dynamic playback
- $\phi$  value calculation Forging flaw detection by straight probe, can find the highest wave to conversion  $\phi$  value automatically



- 500 independent channels (can be expandable), which can input and store the detection standards of any industry freely, do not need to carry the standard blocks for on-site inspection.
- Store, and playback 500 A-scan waves and data freely
- The DAC, AVG, and TCG curves (depth compensation) are automatically generated and can be segmented. The sampling points are unrestricted and can be corrected and compensated.
- 14 built-in inspection standards
- Free to enter any industry standards
- Pulse width and strength can be adjustable
- B scan and B color scan function
- Can communicate with the computer, and export WORD. File, also the detection report
- IP65 ABS plastic case, sturdy and durable, waterproof and dust-proof, and excellent anti-interference ability
- Use (wireless) communication software to analyze data print reports, etc.;
- The 260,000-color true color screen is suitable for working environments under strong light or low light
- High-performance lithium battery can work continuously for 8-10 hours
- Real-time clock recording: real-time flaw detection date, time tracking record, and storage
- With power-down protection, storage data can not be lost
- Flaw detection parameters can be automatically tested or preset
- Digital rejection does not affect gain and linearity
- Gain compensation: Db attenuation can be corrected for surface roughness, curved surfaces, long-range flaw detection of thick workpieces, etc.
- Can operate the flaw detector by software at the PC, achieving the goal of a computer-controlled flaw detector to detecting



## Technical Specification

|                              |  |
|------------------------------|--|
| Display                      | 7-inch TFT color screen, 800 x 480 resolution                      |
| Operation mode               | Button, Rotary, Touch Screen                                       |
| Power supply                 | Lithium Ion Battery  |
| Battery capacity             | 5.0Ah  |
| Power voltage                | 12 V   |
| Power quantity               | 1  |
| Working time                 | ≥ 8 hours  |
| Adapter input                | DC 100 to 240 V 50 Hz/60 Hz  |
| Adapter output               | AC 12V   |
| Adapter power                | 36 W   |
| Data storage                 | SD card  |
| Alarm                        | 1  |
| Working Temperature          | 14° F to 113° F  |
| Storage Temperature          | 4° F to 140° F   |
| IP Grade                     | IP 65  |
| Dimension                    | (9.64 in x 6.10 in x 2.16 in) 245 mm x 155 mm x 55 mm              |
| Weight                       | 2.60 lb (1.18 kg) (including battery)                              |
| <b>Conventional UT Model</b> |  |
| Probe Connector type         | LEMO 00  |
| Channel Type                 | Single channel   |
| Channel Num                  | 500 group (able to be scaled)                                      |
| Pulse Type                   | Negative sharp wave  |
| Transmit Voltage             | 50 to 350V, step in 50V  |
| Damping                      | 560 Ω  |
| Gain                         | 0 to 110dB, step: 0.5/2/6/12dB                                     |
| Gain Fine Adjustment         | -4 to +4   |
| Surface compensation         | All Gain Range   |
| Working Frequency            | 0.5 MHz to 20 MHz;   |
| Probe Type                   | Single, Dual, Through, Immersion type                              |
| Filter                       | Three optional:<br>1 MHz to 4 MHz/0.5 MHz to 10 MHz/2 MHz to 20MHz |
| Detection Mode               | Negative/Positive/Two-way/RF                                       |
| Reject                       | 0% to 80%, step 1%   |

|                            |  |
|----------------------------|--|
| Testing Range              | 0 mm to 15000 mm, Minimum display range: 15 mm (in steel)  |
| Material Velocity          | 100 m/s to 20000 m/s   |
| Pulse displacement         | -10 mm to 1000mm   |
| P DELAY                    | 0 us to 200 us   |
| X-VAL                      | 0 mm to 100 mm   |
| Guide                      | Weld, Sheet, Forging inspection  |
| Testing Point              | Peak/X-Val/J Val   |
| Measurement                | Gate: Amplitude、 Amplitude dB value、 Range、 Horizontal distance Vertical distance、 The difference value between A and B Gate<br>Cursor:2 cross cursors can test the horizontal and vertical distance, and the distance between cursors (under B scan function) |
| Gate                       | Gate start: all range  |
|                            | Gate width: all range  |
|                            | Gate level: 10 % to 90 %, step: 1 %  |
| Curve                      | DAC, maximum six curves, meet NB/T 47013, GB/T 11345, GB/T 29712, and other standards  |
|                            | TCG, maximum six curves  |
|                            | AVG  |
| Other functions            | Full screen, cursor switch(range/Height/Horizon), single/continuous auto gain (10 % to 100 %, step 10 %), echo compare, echo full, peak envelope, peak memory, fast scan, outside mode, screenshot   |
|                            | Peak freeze/Crack depth/Gate expansion//curved surface modification/ B scan/Flat weld simulation//video  |
| Alarm                      | Sound and light alarm  |
| Sensitivity Leavings       | ≥ 65dB (200 mm to Φ 2FH, 2.5 PΦ 20)  |
| Horizontal linearity error | ≤ 0.3%   |
| Vertical linearity error   | ≤ 3%   |
| Amplitude linearity error  | ≤ ±2%  |
| Attenuator accuracy        | 20 dB ±1 dB  |
| Dynamic range              | ≥ 32 dB  |
| Distant resolution         | ≥ 26 dB  |
| Noise Level                | < 40 × 10 <sup>-9</sup> V  |



## Standard Configuration

| <b>S No.</b> | <b>Name</b>                 | <b>QTY</b> |
|--------------|-----------------------------|------------|
| 1            | Main unit                   | 1          |
| 2            | Power adaptor               | 1          |
| 3            | probe connecting cable      | 2          |
| 4            | Instrument case             | 1          |
| 5            | Instruction Manual          | 1          |
| 6            | Straight probe 10mm 2.5MHz  | 1          |
| 7            | Angle probe 13x13 K2 2.5MHz | 1          |
| 8            | Warranty card               | 1          |