

## HPA-500

### Portable Phased Array Ultrasonic Flaw Detector

#### Introduction

HPA-500 is a portable 64-CH phased array ultrasonic flaw detector originally developed by HUATEC. It is water-proof and oil-proof, fan-free and with touch screen. Whole-process data logging, innovative phased array probes and inspection methods being the advantages, this model guarantees superior performance and support, which makes it among the best of its kind for high C/P ratio.

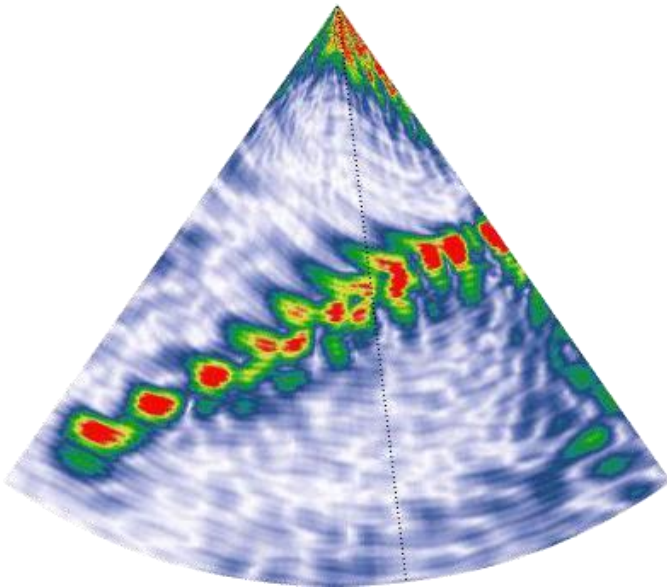


## **Main Function**

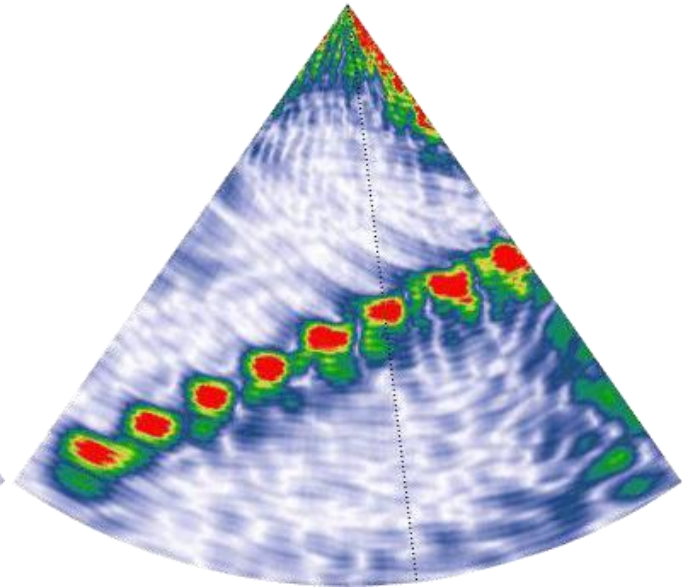
- ★ File & Entry Management System for Flexible Bridging between setting (Focal Law & Model), Calibration and Inspection
- ★ Modular Configuration: L-Scan, S-Scan, L-C-Scan, S-C-Scan, Butt-Weld, CrankShaft , Pipeline, TOFD, UT(Conventional),
- ★ 3D Simulation Model
- ★ Image analysis
- ★ Natural Structure of Heat Dissipation
- ★ Dynamic Depth Focusing (DDF)
- ★ Smooth Filtering
- ★ Touch Screen
- ★ ACG Calibration
- ★ TCG Calibration

## Feature

### I Dynamic Focusing



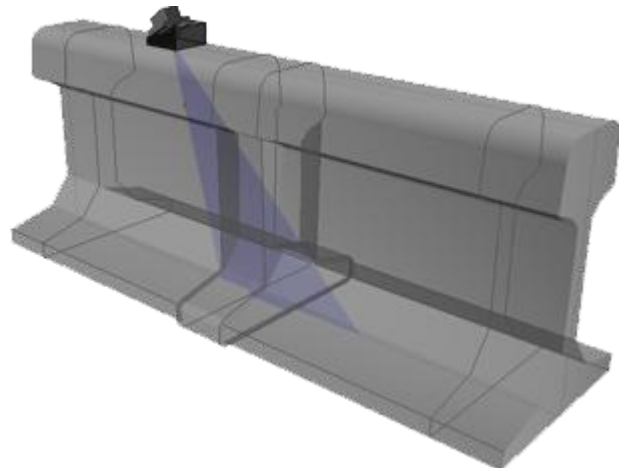
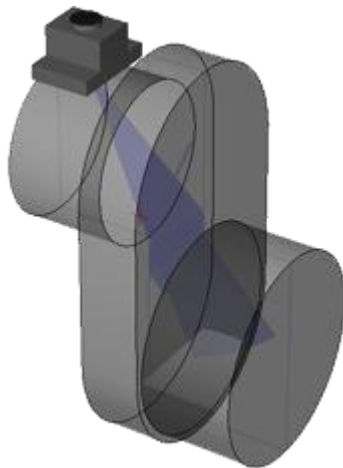
Dynamic Focusing Off



Dynamic Focusing On

### II 3D Simulation Model

The 3D simulation scheme can be customized to offer one-for-all solutions.



### III APP Menu

Menu of the software is shown in the manner of APP.  
It can be cut down or enlarged accordingly if asked by the users.



### IV Metallic Housing

To strengthen the instrument, both shielding and heat-dissipating



## V Protective Pedestal

To prevent any damage to either the instrument or the object

## Specification

### Channel Configuration

Mode	PA	UT	TOFD(Optional)
Channel	16:64	2	2

### Physical Specification

Display	11-inch 800X600 TFT color display
Transducer Ports	160-pin PA transducer port; Lemo-00 conventional transducer Port, for either T-R or T&R
I/O Ports	<b>USB2.0 Port:</b> 2(qty)
	HDMI; encoder
	LAN(Gigabit-NIC);
	WIFI
	I/O (commissioning)
	2D Encoder
Memory	<b>In-Built:</b> 16G RAM+4GB FLASH ;SD card (max to 32G); <b>External:</b> USB drive
Weight	3.5Kg (with 1 battery)
Dimension	284mm×202mm×95mm
Power Supply	AC: 100~240V, 50~60Hz; DC: 12V
Charging	(battery) within or individually
Battery Life	6 Hours
Working Power	24W
Language	English

Temperature Conditions	Ambiance: -20°C ~ 50°C Storage: -20°C ~ 60°C
IP	IP54

mon or special

## Performance Specification

Mode	PA	UT	TOFD(optional)
PRF	50Hz ~ 10kHz	50Hz ~ 5kHz	50Hz ~ 5kHz
Voltage	Bipolar, ±45 ~ ±100V, with 5V per step	Negative Square Wave, -75V ~ -250V, with 25V per step	Negative Square Wave, -75V ~ -250V, with 25V per step
Pulse Width	20ns ~ 800ns, with 5ns per step	20 ~ 800ns, with 5ns per step	20 ~ 800ns, with 5ns per step
Damping	50Ω	80Ω / 400Ω	80Ω / 400Ω
Sampling Rate	125MHz	200MHz	200MHz
Delay Precision	2.5ns	N/A	N/A
Rx Delay	0 ~ 40us	N/A	N/A
Bandwidth	0.5MHz ~ 19MHz	0.5MHz ~ 15MHz	0.5MHz ~ 15MHz
Gain	0.0 ~ 80dB	0.0 ~ 110.0dB	0.0 ~ 110.0dB
Filter	0.5-9.6MHz、2.5-12.9MHz、3.8-19MHz Optional	broadband, narrowband	broadband, narrowband
Rectification	FW	FW	RF
Reject	0 ~ 80%	0 ~ 80%	0 ~ 80%

Scan Mode	A/L/S/C	A	A/D
Triggering	Encoder	N/A	Encoder
Scan Line	Max 128	N/A	N/A
Skew	L-scan:-89°~+89° S-scan:-89°~+89°	N/A	N/A
Smart-Cal	Velocity/Delay/ACG/ TCG/Encoder	DAC/DGS	Delay/X- Value/PCS/ Wave/Encoder
Range	0.0~1000mm, min 1mm	0.0~2000mm	0.0~2000mm
Displaying Delay (max)	1000mm	2000mm	2000mm
Pulse Shift (max)	N/A	2000mm	2000mm
Unit	mm	mm	mm
Gate	A/B	A/B	A/B
Gate Start	Available within the range	Available within the range	Available within the range
Gate Width	Available within the range	Available within the range	Available within the range
Gate Threshold	0-100%	5-95%	0-100%
Alarm Signal	Buzzer / LED	Buzzer / LED	Buzzer / LED
Spotting	Crest / Flank	Crest / Flank	Crest / Flank
Readout	Amp/Path/ Horizontal/Depth	Amp/Path /Horizontal/Depth	Amp/Path /Horizontal/Depth
Resolution	0.5mm	0.1mm	0.1mm



## Application

- ◇ Common or special welded

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- ◇ Common or special welded seam of steel structure, utility boiler, pressure vessel, pipeline, nuclear power infrastructures, watercraft, oil tank, ethylene tube, etc.
- ◇ Railway welded seams, locomotive wheel sets and axles.
- ◇ Aluminum alloy FSW butts and bonding of composites used in aerospace industry.
- ◇ Blades and bolts used in power industry.
- ◇ Cases when there's not enough space for movement whilst inspection;  
Cases when conventional UT is preferred.







**HUATEC GROUP CORPORATION**  
[www.huatecgroup.com](http://www.huatecgroup.com)

### **Packing Details**

HPA-500 1pc  
PAUT Probe 1pc  
PAUT Probe Wedge 2pcs  
UT Normal Probe 2.5P20 1pc  
UT Angle Probe 2.5P13×13 60°1pc  
UT Probe Cable LEMO 00-BNC 2pcs  
Li-ion battery 1pc  
Charger 1pc  
Power converter 1pc  
HDMI Cable 1pc  
Crossover Cable 1pc  
Allen Wrench (S2.5) 1pc  
Instrument Suitcase 1pc  
USB Drive Disk (8G) 1pc  
User Manual 1pc  
Certificate 1pc

### **Optional accessories**

TOFD Probe 5MHz 6mm/7.5MHz 3mm/  
TOFD Wedge 60°w/anti-wear nail , 70°w/anti-wear nail  
TOFD Wedge R100 curve surface R100/0°  
TOFD Probe Cable LEMO 00-LEMO 00  
Non-Parallel TOFD Scanner  
Scanner for Phased Array  
Encoder Cable Extension  
Other Allen Wrench for TOFD  
Other probes/wedge for Phased Array and TOFD  
Calibration block