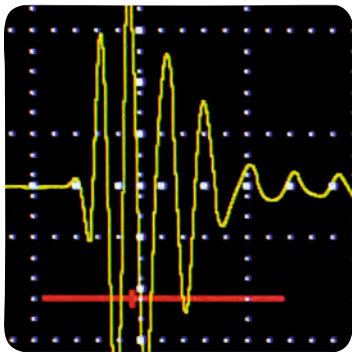


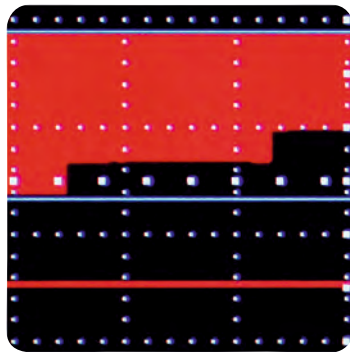
200 hours + Video recording

Playback test and calibration data with echoes, gate movements, DAC, TCG, DGS details in the instrument and **Convert to mp4** for easy transmission by email or Whatsapp
Generate 2 page pdf report with ease!

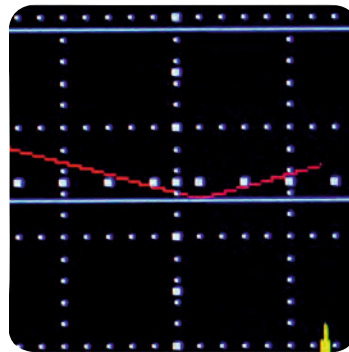
Ultrasonic Flaw Detectors K7, K8, K8LTD, K9 & K1.9



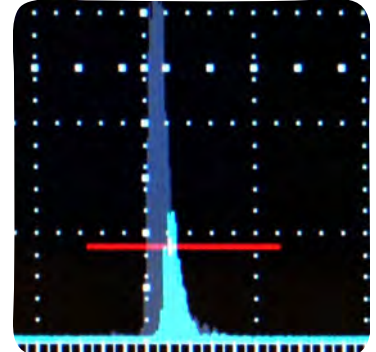
RF Wave



B Scan



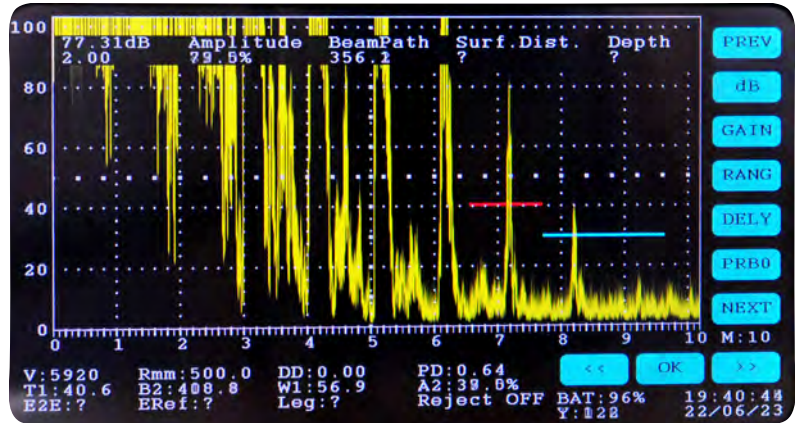
Angle beam plot



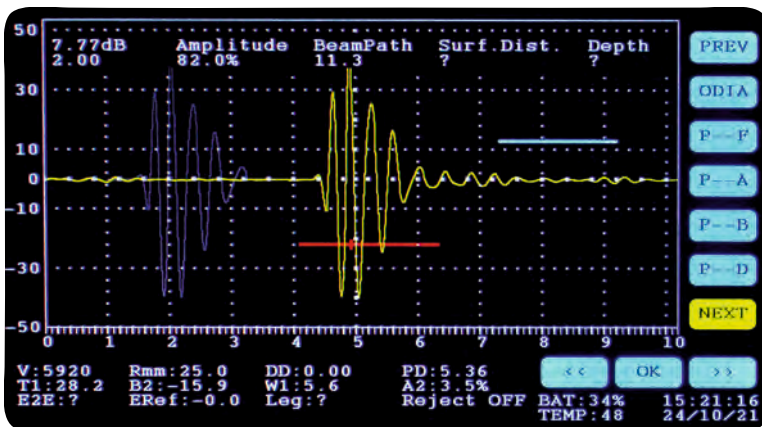
Echo store

- State-of-the art gate movements
- Dynamic 14 point DAC & TCG, DGS
- Shaded Leg and details
- Curvature Correction, display lock
- AWS D1.1 Weld evaluation
- Set or measure amplitude to xx.0 or xx.1%
- dB to DAC, eRef, max amp readout 110%
- Built in scientific calculator
- High penetrative power, low noise
- Two point Auto calibration
- Rapid save, reporting, video recording and playback
- Create 2 page pdf report during mp4 conversion
- Light weight, rugged design, easy to carry around
- Oil & grease friendly 7 and 9 inch touchscreen display
- Pulse width control for better near surface resolution
- Use bare finger, gloves or stylus to work on touchscreen
- 18-27 hours+ Li-ion phosphate (LiFePO4) battery.
- 16GB internal memory, save unlimited settings and files
- Full PC & VGA connectivity*, convert files to mp4
- Fully designed, developed and made in India

- 2 Energy Steps.
- Second step offers higher energy for testing of coarse grained materials.
- Figure shows the 7th BWE (Red Gate) from the perspex insert on V1 block at 77.31dB and 9th at 18% amplitude and noise below 10% (unfiltered signals, with reject turned off)
- 2 gates for measurement and flaw detection.

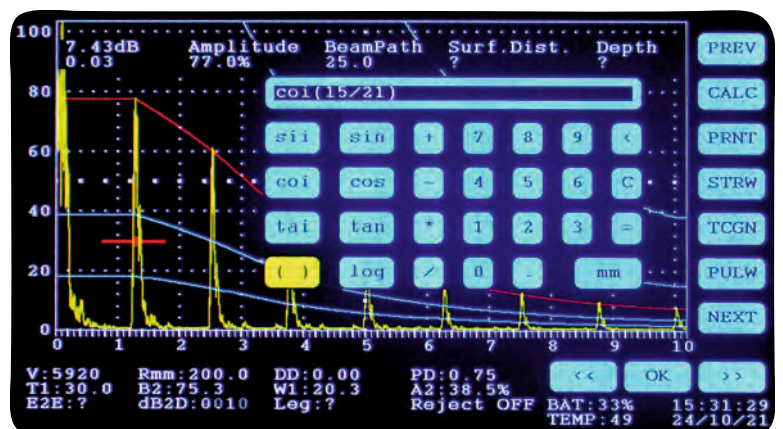


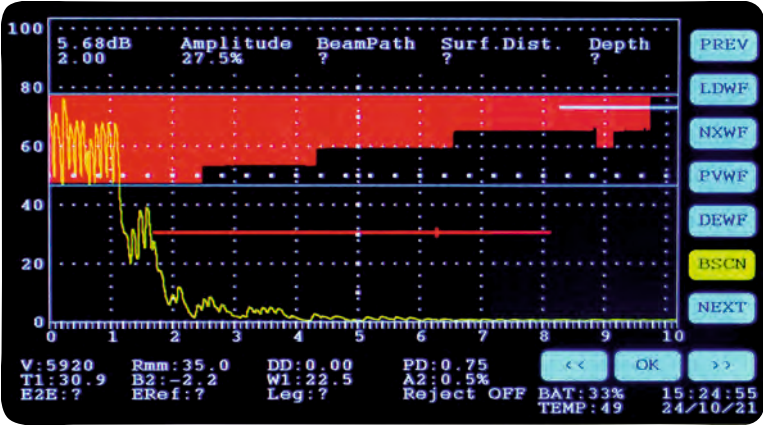
- State-of-the art gate movements.
Gate 1 provides: (1) Amplitude (2) beam path (3) Surface distance (4) depth (5) Echo to echo distance, (6) Echo ref (7) dB to DAC (8) ERS (9) RD (10) SDC (11) Leg (12) reflector location in beam plot (13) Beam Path background highlighter (14) AWS D value
- Second gate can be used independently to measure beam path and amplitude or if used with the 1st gate, a buzzer or flashing colour can be activated to monitor amplitude drop or presence of flaw echo.



- RF Wave and video display
- Offset control for sweep positioning.
- Echo fill and envelope options
- 18-27 hours of Li-ion battery for continuous use. LED for charge status & battery % on display
- 16 GB internal memory for unlimited saving of test files.
- Files may be reviewed in the instrument or transferred to a computer for reporting.

- Scientific calculator for use in ultrasonic testing with direct conversion from inch to mm.
- Metric and inch unit selection.
- No protruding knobs or buttons.
- State-of-the art touchscreen display for convenience.
- Battery status, Temperature, Time, Date

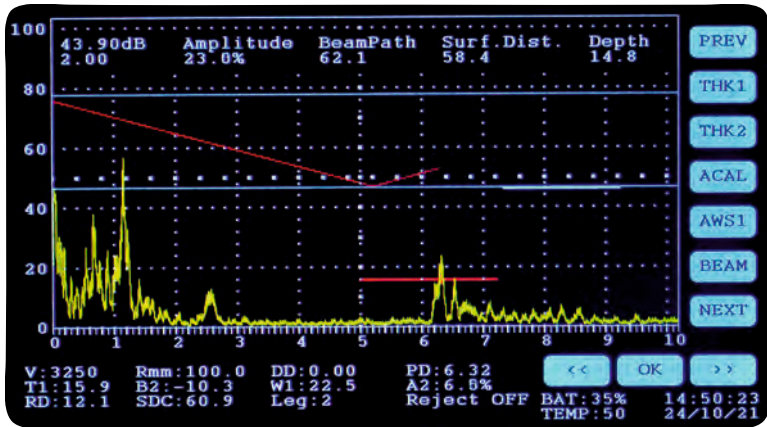




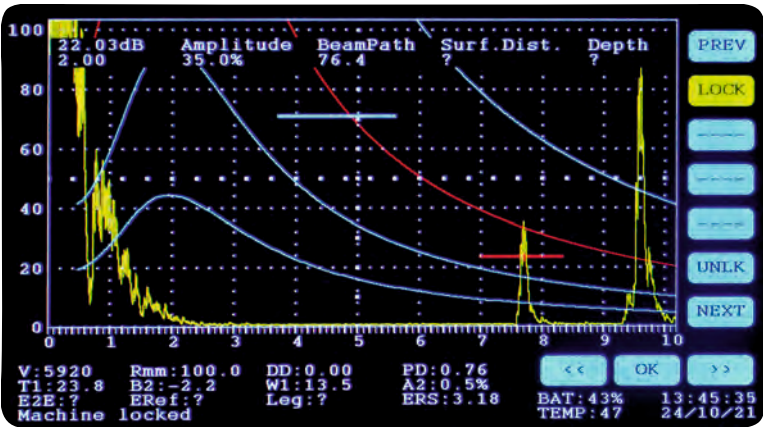
- A and B Scan display.
- 7 display colour combinations for echo, gates and controls
- Selectable PRF (50, 100Hz and 1KHz) useful for contact, immersion or semi-automated test applications.
- Calibrate range with single echo and velocity or use 2 point Auto calibration for narrow tolerance measurements. Measure thickness as low as 1mm with Normal beam probe and E2E control or use TR probes.

- Bright enough to see in any light conditions and option to invert and echo fill for viewing if needed

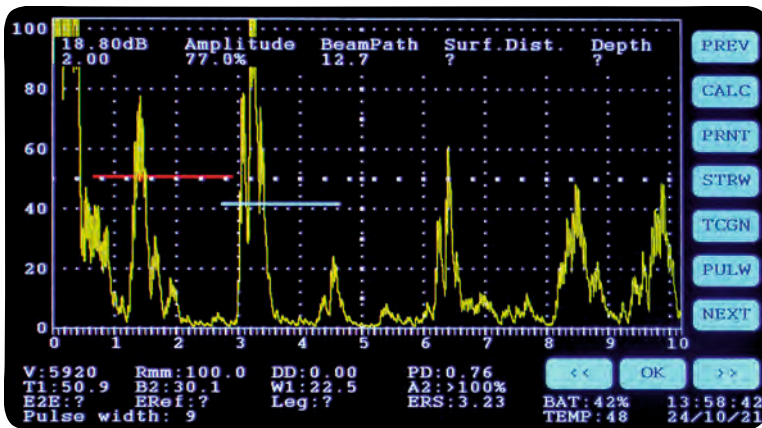
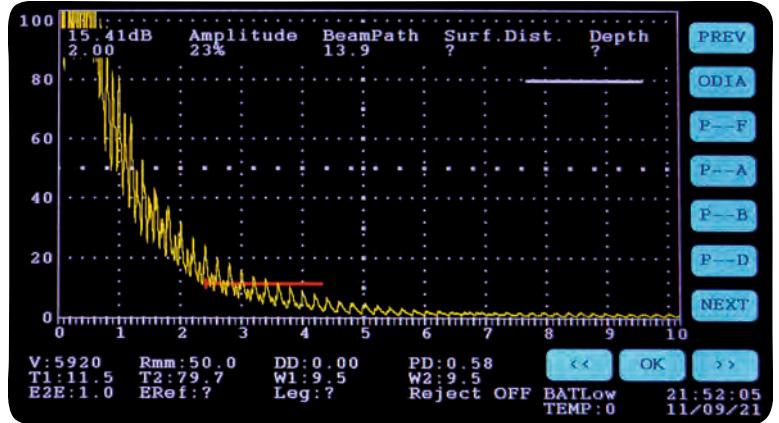
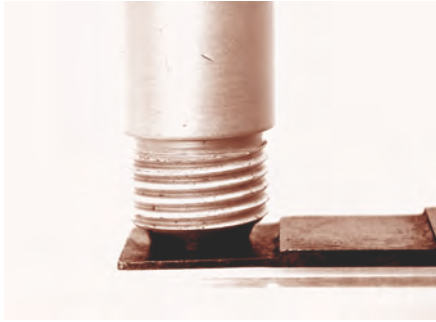
- Beam Plot function to help interpret location of a reflector with ease in angle beam examinations.
- Leg info is provided when a signal is gated.
- As the gate is placed on a signal, background shade changes to gray to help identify the leg.
- Enter test angle and thickness for depth to discontinuity and surface distance
- Curvature correction feature provides corrected surface distance and depth when curved products are examined.



- Change of colour on the last control used.
- VGA connectivity for large displays. Ideal for training of personnel in a classroom and very useful when you need to display the UFD display to a group of witnessing inspectors
- Save unlimited calibration settings with file names and date as required
- Recall settings with ease
- Dedicated Lock button to lock the display

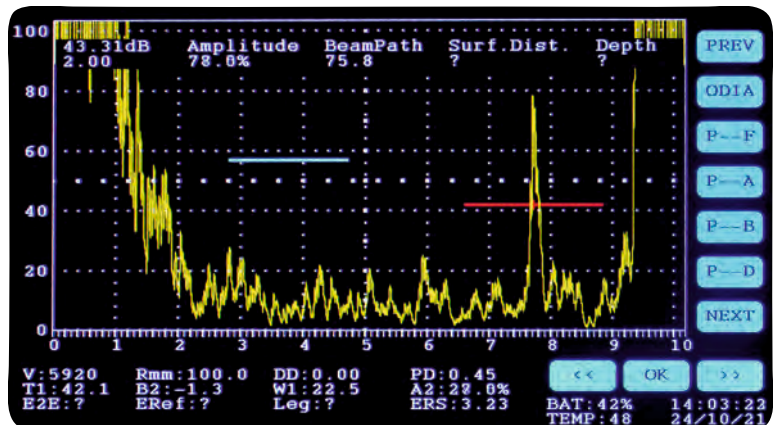


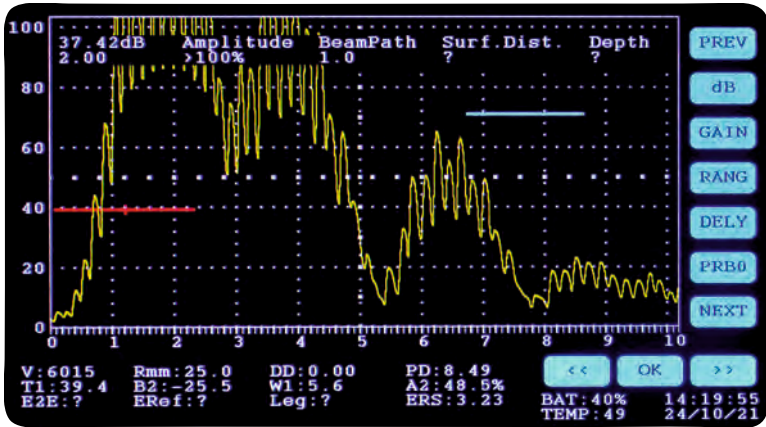
- Low thickness measurement ability using Normal beam transducer and Echo to Echo (E2E) control
- 1mm thickness being displayed in E2E mode using a Normal beam transducer of 4 MHz & 10mm diameter in a calibrated range of 50mm .



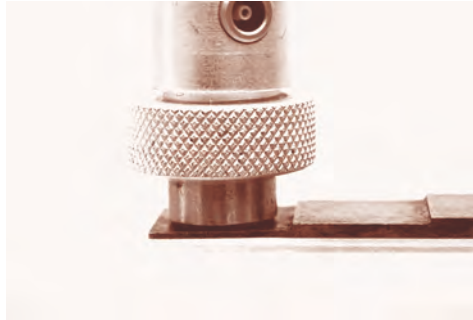
- Detection of 5/64" (1.98mm) FBH at a depth of 12.7mm with a 4MHz, 10mm dia Normal beam transducer.
- Use 2nd gate to measure Beam path (B2) and Amplitude (A2) for another echo

- Detection of 1/64" (0.39mm) FBH with a 4MHz, 10mm dia Normal beam transducer.

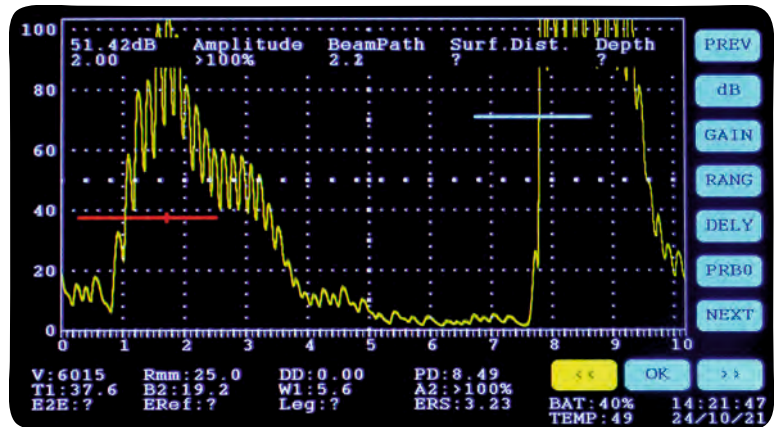




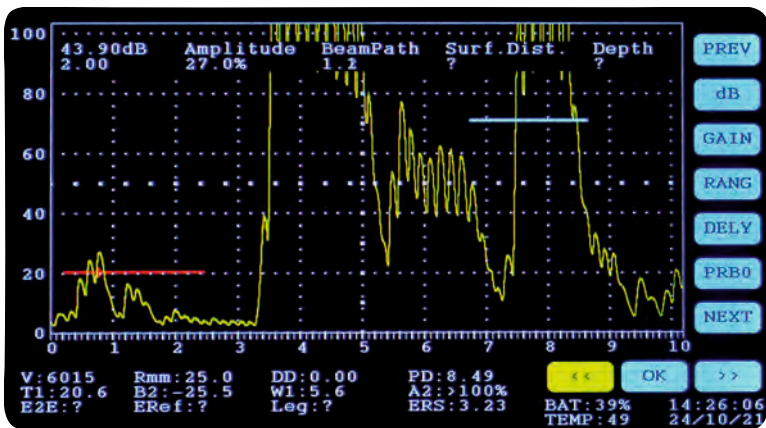
- Dual transducer for thickness checks.
- 1mm thickness being displayed using a dual transducer of 4 MHz & 10mm diameter in a calibrated range of 25mm.

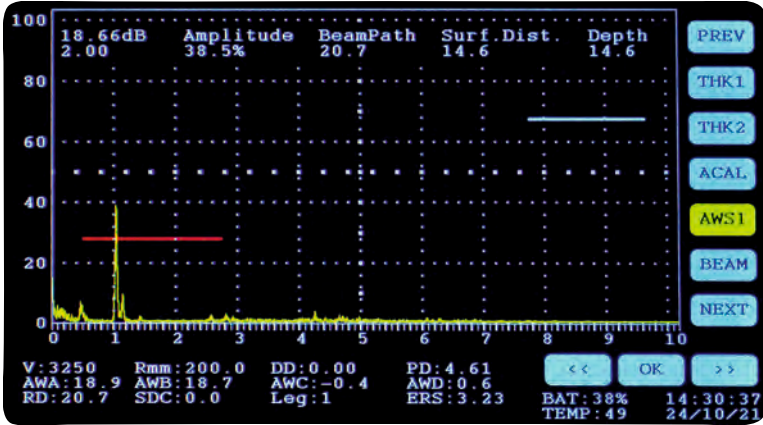


- Detection of 5/64" (1.98mm) FBH with a 4MHz, 10mm dia dual transducer.



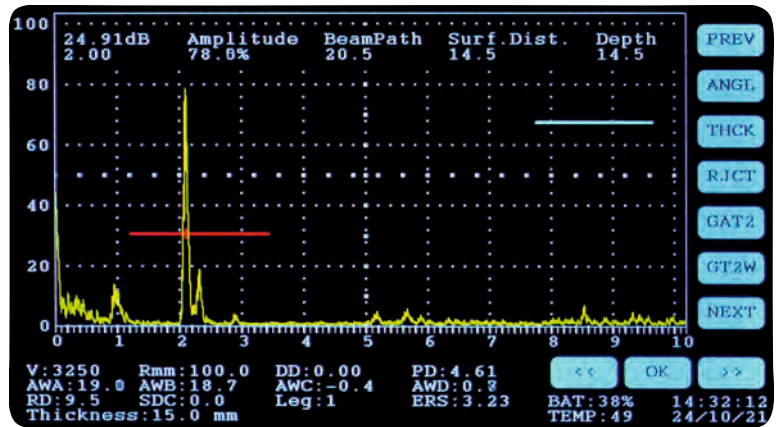
- Detection of 1.5mm dia SDH at 1.2mm depth with a 4MHz, 10mm dia dual transducer.



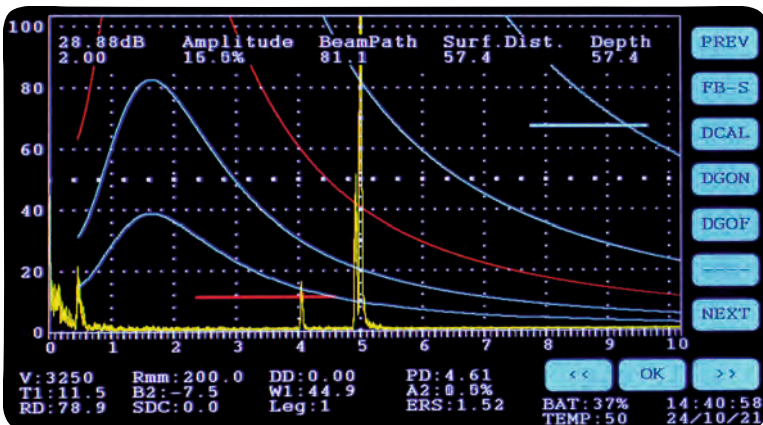


- AWS D1.1 Weld evaluation made easy. Just set 1.5mm dia SDH on V1 to 40% FSH & enter AWS for evaluations.
- Change amplitude as required
- Save settings in instrument and recall for work
- Print test result with AWS details or record a video of test

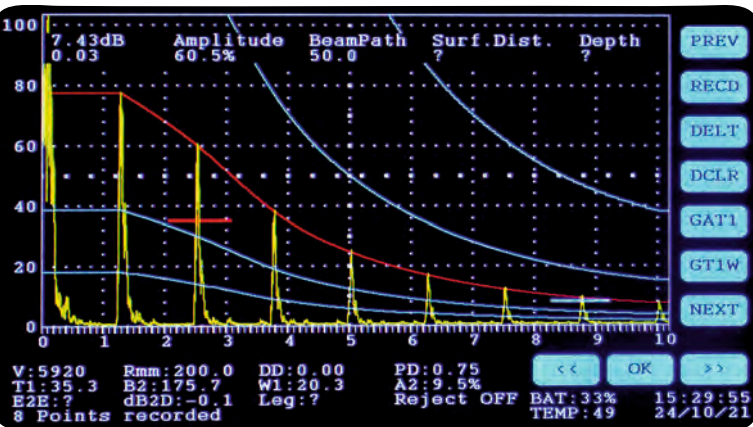
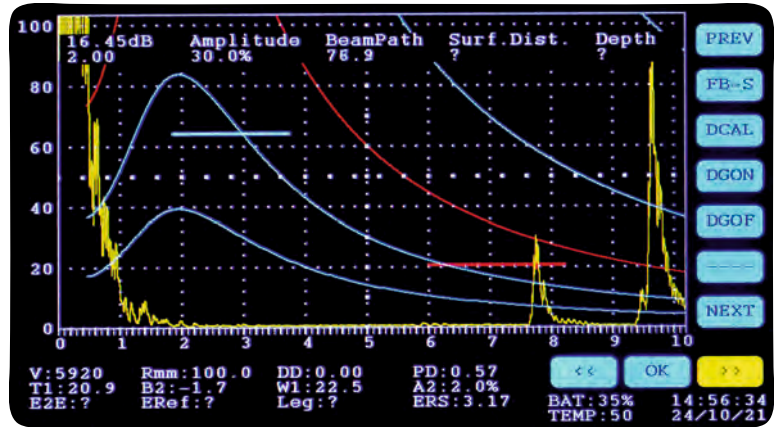
- Detection of 1.5mm SDH at 15mm depth on V1 block with a 4MHz, 8x9mm, 45 degree angle beam transducer.



- Detection of 4/64" (1.58mm) FBH with a 4MHz, 8x9mm, 45 degree angle beam transducer. Measurement shown with DGS

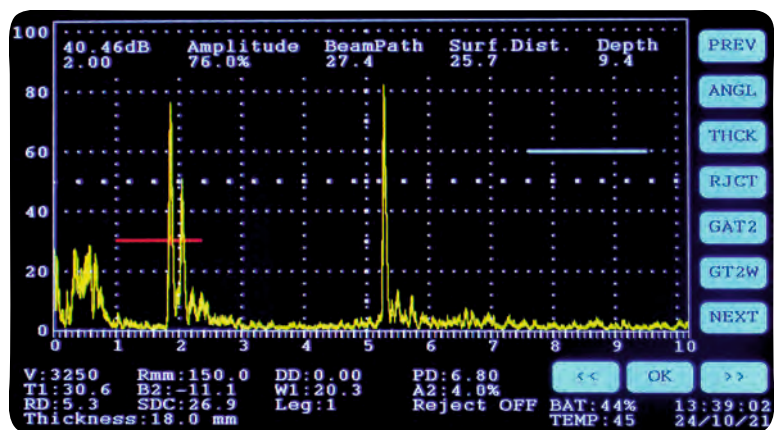
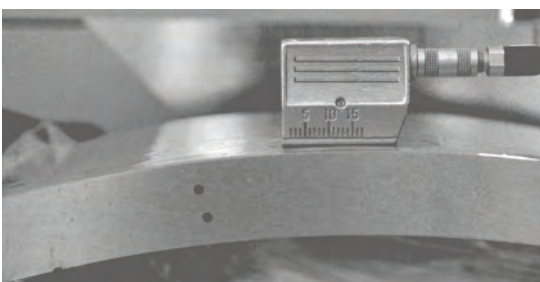


- Dynamic DGS curves
- Enter probe frequency, diameter, FBH size for calibration. Change amplitude or range as desired.
- Curves of -6, -12, +6 & +12dB by default
- ERS value is displayed when a signal is gated.
- Save settings & save test result with curves for your reports
- Construct DGS curves using reference FBH or back wall echo



- Construct 14 point Dynamic DAC or TCG with -6, 12 & +6, 12 dB curves. Static DAC also available
- Set or measure amplitude to xx.0% or xx.1%
- Save unlimited calibration files either as calibration files or as video that may be converted and transmitted to customers as Mp4 files

- Detection of 2mm dia SDH in a pipe section of 24 inch dia, 18mm thickness with curvature correction engaged. 4MHz, 8x9mm, 70 degree angle beam transducer. RD & SDC are the corrected depth and surface distance respectively.



Logo, Name and address of your company	
ULTRASONIC TESTING REPORT	
Client: M/s NDTTech Kottayam	
Project: For their upcoming work	
Location: Pallom	
Report No: 60	
Weld ID: N/A. Thickness: 25. Class: N/A	
Welding process: N/A	
Contractor: N/A	
Test object: Rolled component, Diameter: N/A	
Drawing no: N/A	
Test material: CS, Identification no: N/A	
Report date: 23-02-2023	
Heat no: N/A	
Surface condition: As ground	
Stage of test: After heat treatment	
Test Procedure/Specification: ASTM E 164	
Technique: Pulse Echo	
Code: N/A	
NB freq.: 4MHz, Dia: 10, Sensitivity: 7.51dB, NB Acceptance criteria: Reject if > DAC curve	
TR freq.: N/A, Dia: N/A Sensitivity: N/A, TR Acceptance criteria: N/A	
AB freq.: 4MHz, Angle: 45 Size: 8x9mm, Scanning Sensitivity: N/A, Transfer correction: N/A	
AB freq.: N/A, Angle: N/A, Size: N/A, Scanning Sensitivity: N/A, Transfer correction: N/A	
AB freq.: N/A, Angle: N/A, Size: N/A, Scanning Sensitivity: N/A, Transfer correction: N/A	
AB Acceptance criteria: N/A	
Couplant: Vaseline	
UFD make: KappaWave, Model: K9 Serial: 01121863, Calibration validity: xxxxx	
Field calibration date & Time: 15-02-2023 11:30 Hours	
Calibration blocks: V2, Block material: CS	

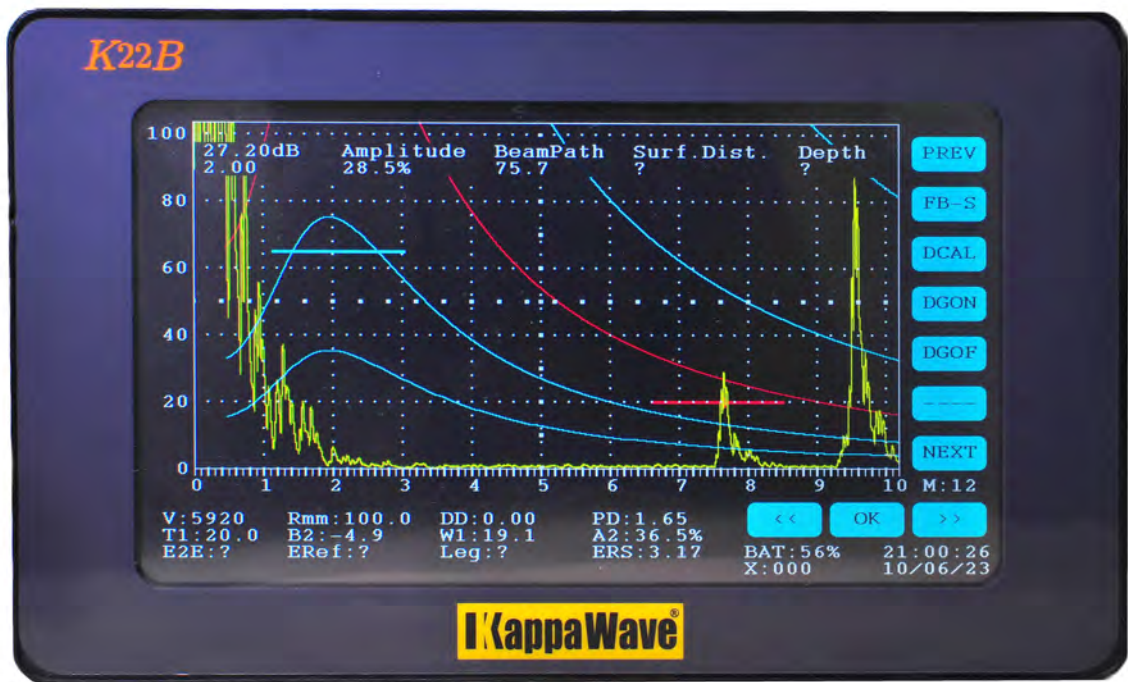
1

Logo, Name and address of your company			
Field calibration re-checked by: N/A			
Date & time: N/A			
Reported amplitude of indication in % FSH: N/A			
Reported amplitude of indication in % DAC Ref: N/A			
Indication location from: N/A. Length: N/A. Height: N/A			
File from machine	Drawing		
<pre> dB: 33.53 Amp: 22.0 Beam Path: 76.8 S.Dist: 7 Depth: ? V: 5920 Rmm: 125.0 DD: 0.0 PD: 0.71 ERS: 1.18 Angle: 0 Thickness: 0.0 DS: 3.1 AWA: 38.7 AWB: 11.5 AWC: 4.0 AWD: 23.1 A2: 13.5 B2: -2.1 ERef: 46.6 dB2D: 4.9 Log: 0 Reject: 0.0 Pulse: 9 Energy: 1 EZE: 0.0 ODA: 0.0 RD: -7.8 SDC: 0.0 23/02/23 08:53:13 v60.kap </pre>			
Photo			
Remarks			
This report is prepared to demonstrate the ability to automatically generate a pdf report from the video recorded and played in the machine. You can print and place your signature or use digital signature. All above fields in the report may be added by the user as required. The screenshot added above, provides all test parameters for your review. Drawing and photo provided are from a pool of photos in our PC. In real life, you may add your own drawings and photos for your reports. Video 54 shows the step by step DAC construction performed during the demonstration.			
	Test Engineer	Client Engineer	Witnessed by
Signature			
Date			
Date: 23/2/2023			

2

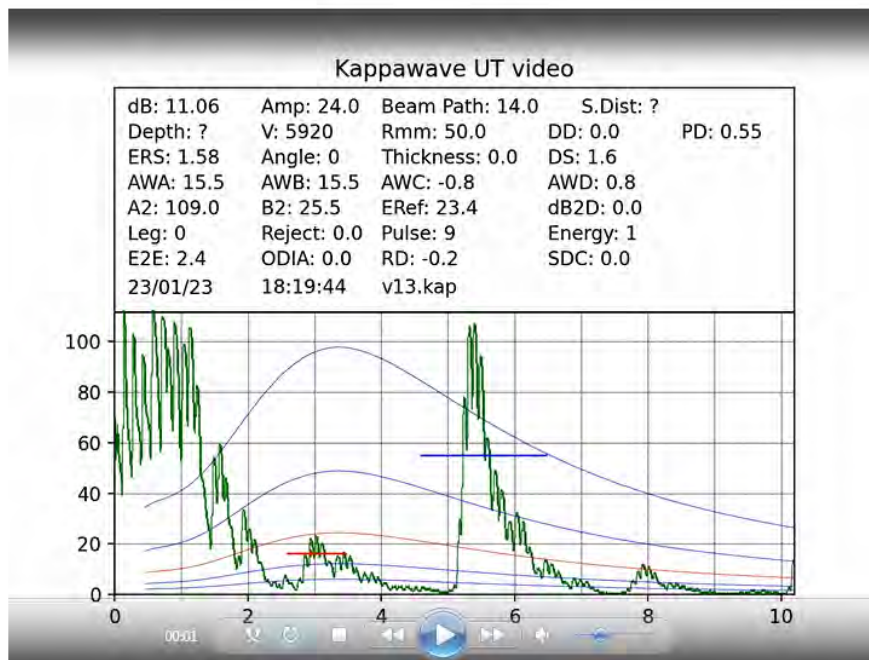
- Save test results in one click.
- Transfer files to PC using the interface software for report generation
- Video files may be replayed in the instrument or transferred to PC for play, analysis or conversion to other format.
- Ability to record and evaluate each step in range and sensitivity calibration and test result.
- Easy recording and playback. Record over 200 hours of video
- Files saved in the instrument remains protected from being modified or manipulated in the instrument.
- Video conversion to MP4 and Reporting feature available only for models KBLTD, K9 and K1.9.
- Video playback in machine is available in models K8, KBLTD, K9 and K1.9.

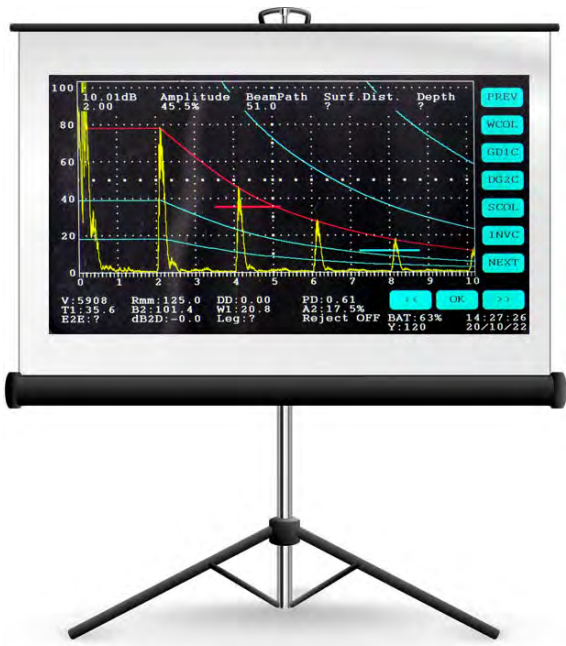
- Create a 2 page pdf report with required details during video conversion to mp4 in PC
- Edit or create instantaneously a 2 page pdf report from the video downloaded in the PC
- Reports may be customised with your company's logo, info, drawings, photographs etc.
- Software for video conversion to Mp4 and reporting provided for models KBLTD, K9 & K1.9
- Files from instrument is traceable with a unique ID of year, month, date and time.
- Save unlimited calibration and test files
- Short learning time. Very easy to record video clips of short duration for transmission in E mail or WhatsApp.



Model K 1.9

- 22.8CM (9 inch) super sensitive touchscreen display
- 27 hours of battery for continuous work
- 16-32GB internal memory, A and B scan display, RF Wave, Video recording, full PC connectivity for file transfer and video conversion.
- Higher visibility. 7 colour combinations for display. VGA connectivity.
- Versatile instrument. Offers all other features of K9.
- Ideal when large display in a portable unit is desired
- Instrument offers added security when a customer needs to verify the reports with original test file.
- Easy to carry around





- Port for VGA and PC connectivity. Extend the display to external monitors or projectors.
- Ideal for production monitoring and training classes.
- Change of colour on the menu indicates the last action performed. Play recorded video files on to a large screen using a projector
- Instrument designed and manufactured in India to meet ASTM E 317, IS 12666, BS 4331-II
- Hold in one hand and use left thumb to change amplitude during work

- Lock the display during work
- Fast, responsive menu buttons and menu page indicators
- Reference blocks, accessories and Transducers with frequencies from 1 to 10MHz in different sizes are available.
- An android application for mobile users are available that provides step by step instructional videos on how to use the features of the instrument.



- Supplied in a robust custom made carry case with space for accessories.
- Specially made back pack (optional accessory) to carry the UFD for daily work also available.
- Satisfied customers

Technical Specifications for KAPPAWAVE Ultrasonic Flaw Detectors

	K7	K8	K8LTD	K9	K1.9
Test Range : 25mm to 6m in steel	•	•	•	•	•
Velocity : Selectable in m/sec, 1000-8000 m/sec	•	•	•	•	•
Unit : Selectable: mm or inches for range	•	•	•	•	•
Delay : 0-2812 μ sec	•	•	•	•	•
Zero offset : 0-1000 μ sec	•	•	•	•	•
Range : Selectable with velocity & thickness	•	•	•	•	•
Range calibration : Single echo with velocity or 2 point Auto calibration	•	•	•	•	•
Screen : Touch screen 17.7cm (7") TFT	•	•	•	•	22.8cm (9") TFT
Resolution : 800 (RGB) \times 480	•	•	•	•	•
Active area : (W)154 \times (H)85 mm	•	•	•	•	(W)200x(H)111.4mm
Last action : Identify by colour of menu button	•	•	•	•	•
Cancel function : Next & Previous key	•	•	•	•	•
A scan display area : (W) 127mm \times (H) 63mm	•	•	•	•	(W)162x(H)82
Display marks : 100 divisions (Horizontal) 5 divisions (Vertical)	•	•	•	•	•
Measurement : Gate & display marks for distance and amplitude	•	•	•	•	•
Pulser : Negative spike	•	•	•	•	•
Pulse width : User variable	•	•	•	•	•
PRF : Selectable: 50Hz, 100Hz, 1 KHz	•	•	•	•	•
Amplitude : Set or Measure in xx.0% or xx.1%	•	•	•	•	•
Damping : Selectable, 1K , 120E	•	•	•	•	•
Frequency : 1-20MHz	•	•	•	•	•
Cross talk attenuation for TR : 78 dB with 4MHz probe	•	•	•	•	•
Gain : 0 to 96dB	•	•	•	•	•
Gain increment : 0.03, 0.2, 1, 2, 6, 12dB	•	•	•	•	•
Rectification : RF, Positive half wave	•	•	•	•	•
Reject : Selectable: 0-44%FSH. Does not lower echo amplitude	•	•	•	•	•
Modes : Pulse echo, through transmission or dual	•	•	•	•	•
Signal Amplitude display : 0-100% FSH	•	•	•	•	•
Signal amplitude measurement: max 110% FSH	•	•	•	•	•
Horizontal Non linearity : < 1% FSW	•	•	•	•	•
Vertical Non linearity : <3% FSH	•	•	•	•	•
Measurement gates : Selectable: 2 independent gates	•	•	•	•	•
Echo measurement : Flank	•	•	•	•	•
Gate start : Selectable over entire displayed range	•	•	•	•	•
Gate width : Selectable from gate start to end of displayed range	•	•	•	•	•
Gate colour : User variable	•	•	•	•	•
Gate height : Selectable from 5% to 100% FSH	•	•	•	•	•
Alarms : Selectable Audio, flashing colour	•	•	•	•	•
Echo to echo : Gate 1	•	•	•	•	•
Display locations : Transparent overlay on top of screen & below A scan display	•	•	•	•	•
Gate 1 : Amplitude, beam path, Surface distance, depth, Echo to echo, Echo ref*, dB difference, ERS*, RD*, SDC*, Leg, depth in beam plot*, Beam Path background highlighter, AWS D value*.	*	•	•	•	•
Gate 2 : Beam path, Amplitude, Alarm	•	•	•	•	•
Amplitude measurement : Floating maximum amplitude locator on Gate 1	•	•	•	•	•
AWS D1.1 *: Auto calculation of D value	•	•	•	•	•
DAC - TCG : Dynamic DAC (changes with gain and range)	DAC only	•	•	•	•
DAC Static	•	•	•	•	•
DAC - TCG Points : Max 14 points	DAC only	•	•	•	•
DAC - TCG offset Default : +6, 12, -6,12 dB (Total 5 curves for ease of sizing)	DAC only	•	•	•	•
Dimensions (mm) : (W) 212 X (H)122 X (D)75	•	•	•	•	(W)255X(H)157X(D)75
DGS : Dynamic DGS curves with default +6, +12 & -6 & -12 dB curves & ERS	•	•	•	•	•
DGS curves : Using back wall echo	•	•	•	•	•
DGS curves : Using reference FBH	•	•	•	•	•
Weight : 1.75 kg with Li-ion batteries for 18-27 hours	•	•	•	•	2.06Kg
Menu buttons : Easy to access, page numbers provided	•	•	•	•	•
Time, date, temperature, battery status : Provided	•	•	•	•	•
Scientific calculator : Built in calculator for ultrasonic testing with direct mm to inch conversion	•	•	•	•	•
Keypad : Touch entries. Use with finger or stylus, with or without gloves	•	•	•	•	•
Language : English	•	•	•	•	•
Boot time : 4 seconds	•	•	•	•	•

Technical Specifications for KAPPAWAVE Ultrasonic Flaw Detectors

	K7	K8	K8LTD	K9	K1.9
Probe connections : 2 nos, Mini Lemo	•	•	•	•	•
Probe angle : 0 - 90 degrees	•	•	•	•	•
RF wave* :				•	•
Offset control* : For sweep positioning				•	•
B Scan : Basic B scan display*				•	•
Beam Plot * : Cross sectional plot of the test material with angle beam path for discontinuity location		•	•	•	•
Curvature correction* : Corrected depth & surface distance when Angle, thickness & diameter given				•	•
Battery : 3.6V, 23Ah, Lithium-ion Phosphate LiFePO4, rechargeable	•	•	•	•	3.3V, 24Ah LiFePO4
Battery life : 18-27 Hours	18	18	18	18	27
Battery charger : External 220V Ac mains, 50Hz	•	•	•	•	•
Charge & temperature indicator : For charge % during use and temperature	•	•	•	•	•
LED for battery charge status	•	•	•	•	•
Battery charging max temp and time : 40°C, 3 to 5 hours	•	•	•	•	8
Saving of Calibration files : Unlimited calibration settings can be saved in equipment with name,number and date	•	•	•	•	•
Loading of settings : Selectable from any saved	•	•	•	•	•
Printing of test files : Unlimited files can be saved (print), these may be transferred to PC for report preparation*, deleted or over written in instrument.	•	•	•	•	•
Viewing of test (PRINT) files in the instrument	•	•	•	•	•
File transfer* : PC connectivity, Reporting software			•	•	•
Video Recording of signals* : Continuous recording and playback ability		•	•	•	•
Transfer files: To PC for play, analysis or conversion to other formats			•	•	•
Default max recording time for individual clips: In minutes		5	5	5	5
Total recording time: in hours		200	200	200	200
Interface software : For connecting instrument to PC and convert recorded video to mp4 and prepare test reports			•	•	•
File names : Auto naming with date & time, thus avoids duplicating	•	•	•	•	•
Echo Display : Fill, envelope	•	•	•	•	•
Display Lock : Dedicated screen lock & Unlock button		•	•	•	•
Echo store : Temporary Echo store for comparisons			•	•	•
E2E: Echo to echo measurement using single gate	•	•	•	•	•
Storage : SD card on board	•	•	•	•	•
Data interface : USB 2.0			•	•	•
VGA connector : 1 no for additional display or projector			•	•	•
Recording of signals : SD card 16 GB	•	•	•	•	•
Operating Temperature : 0° to 50°C	•	•	•	•	•
Enclosure : Dust and moisture resistant	•	•	•	•	•
Protective cover with handle : Optional accessory	•	•	•	•	•
Protective carry case*	*	•	•	•	•
Detachable support stand	*	•	•	•	•
Warranty : 1 Year	•	•	•	•	•

All specifications are subject to change without prior notice. All rights reserved 2023

Standard supply with UFD: (1) Protective cover with handle(2) Stylus* (3) Battery charger (4) Carry case*(5) Operation manual in pdf

(6) Interface, video conversion and reporting software for K8LTD, K9 and K1.9 * (7) Calibration certificate *

(8) Kappawave app for Android mobile (9) USB cable for K8LTD, K9 and K1.9*

* not a standard supply with K7

