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# KUD 60

Portable Ultrasonic Flaw Detector



## The KUD 60...analog performances, digital advantages

The KUD 60 combines the digital powerful advantages with the analog high performances. The high resolution (640 x 480 pixels) color LCD display, 100 Hz update rate, and single shot measurement technique produce a fast, smooth response for immersion and critical weld testing. The quality, durability, dependability and ease of use still remains in this instrument. From rugged field inspections to high resolution thin measurements, long acoustically clean materials, and immersion systems work, the KUD 60 extends the range of applications that a portable instrument can perform.

**Square Wave Pulsar** selectable and tunable for optimum probe matching to satisfy a wide range of tough-to-penetrate applications.

Now, either spike or square wave pulser is user selectable from the front panel.

- Spike pulsers are still preferred for everyday use.

- For low frequencies, square wave pulsers allow optimum probe matching by adjusting pulse width and voltage.

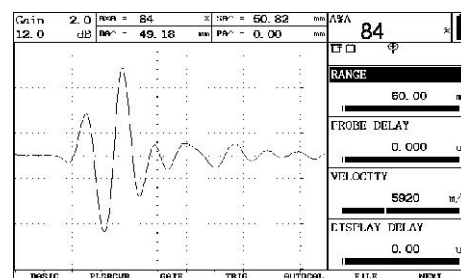
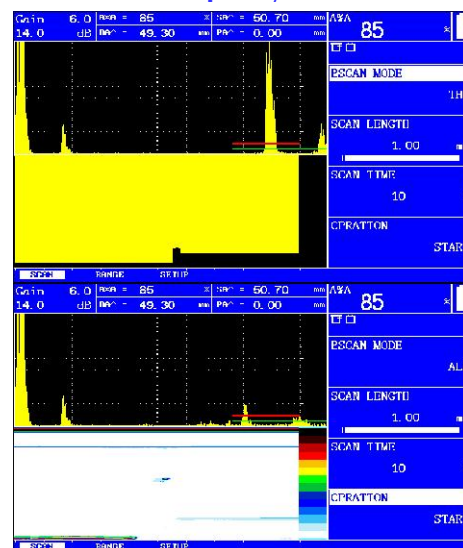
- Difficult to penetrate metallic applications and especially non-metals inspection like composite materials are optimized.

- Pulse width is tunable up to 1000 ns in 10 ns steps for optimum probe matching and versatility in meeting a wide range of applications.

- Pulse voltage is adjustable from 20 to 500 V in 10 V steps.

Rugged durability, great than 8 hours of battery use, fast rotary knob operation, outstanding ultrasonic performance, and now square wave pulser and color leg combine to form a powerful portable ultrasonic inspection tool with new Lithium Ion battery.

## Corrosion-featured B-scan , full-featured B-scan and RF display



# High resolution color display with analog performance and digital advantages

## Vibrant colors

- Hi-resolution (640 x 480 pixels) Color LCD Display with unique signal processing produces "Analog Look and Performance" echo dynamics.

- Select from four vibrant display color schemes to match lighting conditions and personal preference.

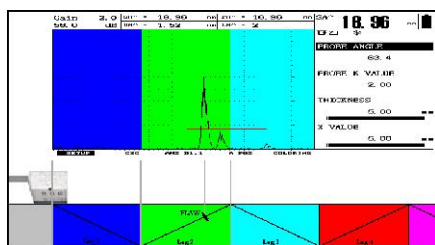
- Choose from eight A-scan colors to relieve boredom & eye fatigue.

- Adjust brightness for easy viewing under all lighting conditions.

- Gates and gate functions are color coded for easy identification and fast adjustment.

## Tools for easy weld inspection

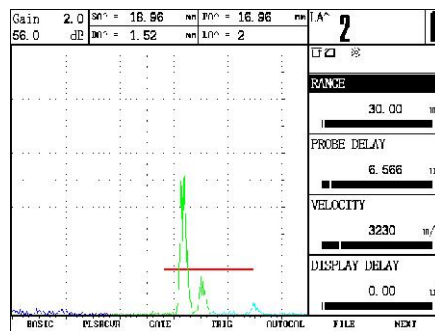
- Color Leg allows easy identification of leg and skip distances for weld inspection.



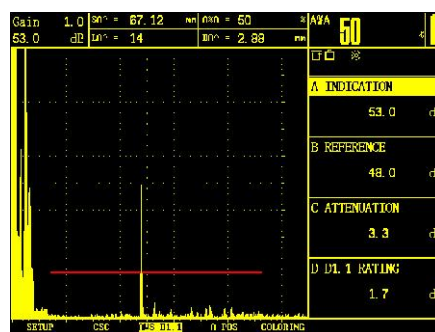
Color Leg indicator displays the legs of the angle beam inspection in different colors

- GRID dynamically changes bands of display background colors for each leg.

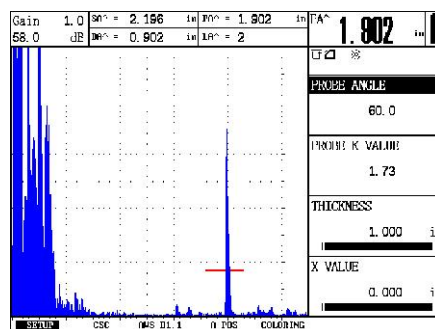
- A-Scan dynamically changes the color for each leg of the "live" A-Scan.



- Weld Rating Calculation simplifies the rating of weld indications according to AWS Specification D1.1, (Formula  $D = A - B - C$ ).



- Trigonometric flaw location function with curvature correction automatically calculates depth, surface distance, and sound path to flaw along with the leg of the inspection when using angle beam probes. All TOF measurements can be displayed in mm or inches.



Four digital reading boxes at top display trigonometric calculations for weld

inspection (SA sound path to flaw in gate A, PA projection distance to flaw in gate A, DA depth to flaw in Gate A & LA leg of inspection that flaw occurs in gate A)

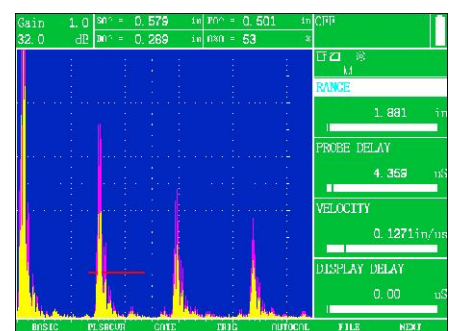
- Real time (single shot) analog and TTL outputs handle a wide range of systems applications.

- Choose from Four Freeze Modes: ALL, Peak Std, Compare or Envelope for optimum waveform evaluation and comparison.

- Three Variable Persistence Modes are selectable in Freeze Envelope to visually assist flaw detection & evaluation for scanning and moving part inspections.

- Behind-the-Freeze mode allows dynamic time base adjustments on frozen echoes. It also stores additional information both before and after the specified range to enable movement of the frozen image.

- Compare frozen reference waveforms to live A-Scans in different colors to easily interpret test results.

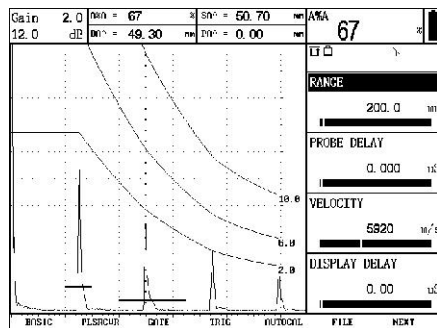




## More measurement capability options and inspection data management

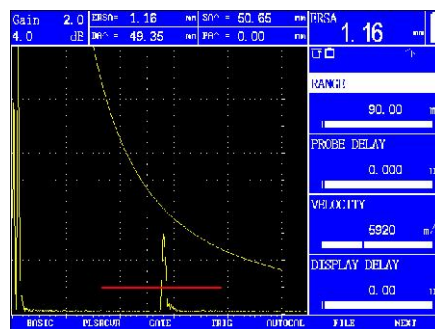
### Tools for easy defect sizing

- 40 dB dynamic multiple curve DAC/ TCG Option corrects for distance/ amplitude variations from material loss and beam spread with ability to edit or insert recorded echoes individually. Up to four DAC curves can be drawn on the screen at one time to show +/- dB curves in addition to the originally recorded DAC curve. Up to 16 data points can be recorded with a maximum curve slope of 12 dB per microsecond. Meets or exceeds industry requirements for TCG.



Multiple curve DAC shows recorded DAC curve in magenta with 4 additional curves based upon dB Offset feature for added flaw sizing assistance. TCG Attenuation and Transfer Correction features make it very versatile for use on other materials and surface conditions.

- DGS (Distance Gain Size) Option displays a curve for a particular equivalent reflector size as a function of the distance from the probe to the reflector. The ERS (Equivalent reflector size) function automatically calculates the corresponding equivalent reflector diameter in mm or inches for any echo in the measurement gate.



### User preferred features...

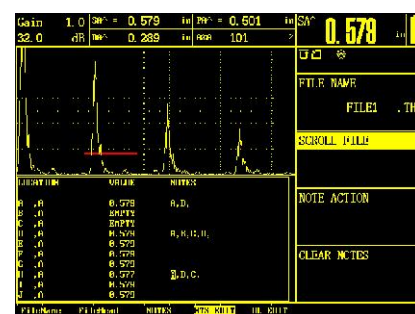
- Simple operation with fast rotary knob adjustments; gain is always directly accessible with the left hand adjustment key and lockable.
- Auto CAL makes calibration fast & easy
- 65 selectable material velocities at the user's fingertips.
- 2 independent gates monitor amplitude and sound path distance for both flaw detection and thickness measurement applications.
- 250 KHz to 20 MHz capability to match probe for optimum performance.
- RF display mode enhances signal evaluation and bond inspection of dissimilar materials.
- 4 selectable damping settings (50, 75, 150, 500 ohms) for optimum probe performance.
- 0.5 mm to 10 m range (in steel) covers thin to lengthy acoustically clean materials.
- dB REF key evaluates subsequent echoes gain value and amplitude against the highest echo in Gate A (reference echo)

when activated.

- VGA Output Option provides an easy way to connect to a PC monitor or PC projector for viewing by large audiences or training purposes.

### Documentation and recording

- Store & preview a minimum of 900 user-named data sets with A-Scans for quick recall and instrument setup.
- DU DataPro software program for bi-directional communication with a PC for easy storage of data sets with A-scan and documentation of test results. This software program also simplifies the transfer, storage, analysis, and documentation of thickness data.
- Reports with A-Scans are output directly to a portable printer.
- Alphanumeric Thickness Datalogger for flexible, convenient storage of thickness readings in Linear, Grid, or Custom-Linear file structures with user-input filenames, location I.D.'s, notes, memo, & header fields.



**Standard delivery :**

Main unit            1pc  
Straight probe       1pc  
Angle probe        1pc  
Connection cable 2pcs  
Power cable        1pc  
PC software (including software  
disk, data transmission cable)  
1suit

**Optional accessories:**

USB interface  
(including driver disk, cable)  
Battery pack    6600mAh  
Different flaw test blocks  
Different kinds of probes