

# Ultrasonic Thickness Gauges

## Models TKG100 TKG150 & TKG250



### 1. Installing Batteries

In order to install batteries, open the battery door at the bottom left of the unit. Slide in two 'AA' batteries with the positive terminal of both batteries facing towards the top of the unit. Close the battery door tight enough so that the batteries make good contact with both battery terminals.

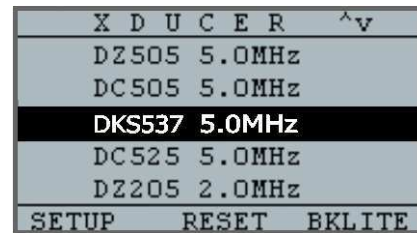
### 2. Powering ON/OFF

To power ON the unit, press and hold the F1 key for approximately three seconds. The LCD will display the company information briefly and then it will move to the transducer selection screen. These two screens are as shown below. To switch the unit OFF, press and hold the F1 key for approximately three seconds. The LCD will briefly display the company information along with a 'count down' clock, after which the instrument will switch OFF.

NOTE: If the Gauge is configured for right-hand operation, the F1 and F3 display prompts will be reversed. To change from left-hand to right-hand operation, press Menu, Display, and User.



Company information screen



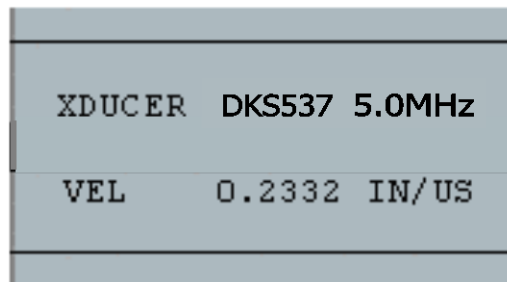
Transducer Selection screen

### 3. Selecting the Transducer type and performing Auto Zero

A new transducer can be selected from the Transducer selection screen (the Transducer selection appears after the device powers ON).

Note: it is very important that the transducer is not touching the test piece or has any fluid on the face prior to selecting which probe is to be used.

While in the transducer selection screen, go to the transducer option that matches the part number on the actual transducer by pressing the up or down arrow key. The unit will briefly display a 'Wipe off Couplant' (fluid) instruction and will then perform an Auto Zero function. During Auto Zero, the unit will display the text 'Performing Auto Zero'.



#### **4. Changing Units**

To change units from IN (inches) to MM (millimeters) or  $\mu\text{sec}$  (microseconds): At the first screen, before the probe is selected, press F1 Menu, scroll to initial settings, press Menu/OK, scroll to units, press Menu/OK, choose the desired unit, and then press Menu/OK and then F1 (Back).

#### **5. Calibrating the Gauge**

Calibrating is the process of adjusting the Gauge for a specific material and transducer before testing the material to ensure that all measurements are accurate. Always perform a calibration before measuring material to obtain standard accuracy. The following steps describe how to perform a Velocity and Zero Calibration. A test step block of known thickness is required to perform an accurate calibration.

##### **Velocity and Zero Calibration**

Note: it is highly recommended that a test block with known thicknesses and multiple steps of the same material with flat and parallel surfaces be used for calibration.

To calibrate both Zero and Velocity at the same time (strongly recommended) first go to the Calibration mode by pressing menu, calibration, and OK. Messages will appear on the bottom of the display prompting the user through the process “couple thin, press zero...” While measuring the thinnest step, select Zero by pressing F2. After selecting Zero the transducer can be taken off of the test block. If the displayed value is different than the known value of the step, adjust the value using the up and down arrow keys and then press F1 (CAL). Then, while measuring the thickest step, select ‘VEI’ by pressing F3. After selecting ZERO the transducer can be taken off of the test block. If the measured value is different than the known value of the step, adjust the measured value using the up or down arrow key and then press OK. The unit will briefly display the acoustic sound velocity value and then return to Measure mode. Note that the order of Zero and Velocity calibration could be reversed as long as Zero is used on the thin section and Velocity on the thick section.

#### **6. Taking Measurements**

Once an Auto-zero is performed on the selected transducer, the unit automatically goes to the measure mode. To take thickness readings, the user can simply apply the (fluid) couplant to the surface and put the transducer on the test piece, applying some pressure, to measure thickness. Depending on the parameter settings, the display may show other parameters. For more detailed information on Measure mode, please refer to the User’s Manual.

#### **7. Changing the Parameter settings**

To change any parameter setting, press Menu/OK and then go to Measurement by pressing the up or down arrow key and then Menu/OK. The Measurement screen lists the parameters in alphabetical order such as alarm, diff, E to E, fast...these vary based on which Gauge is purchased. The procedure to change any parameter is the same...scroll to the parameter, press Menu/OK, scroll to select, and then press Menu/OK. Use the F1 key as the ‘back’ key to return to previous screens and main measurement modes.

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