Program Introduction Menu

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1

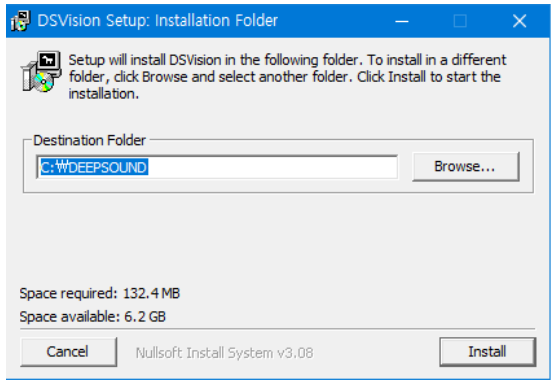
How to update the program

Install Menu

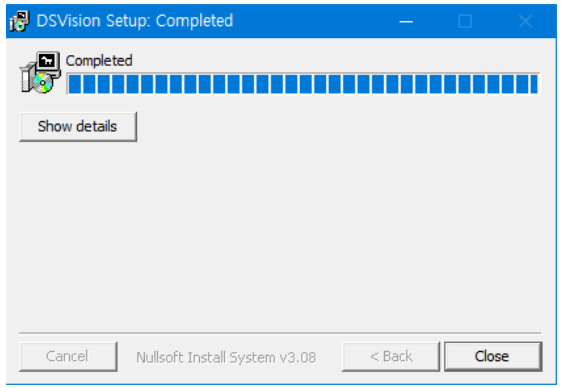
1. Download the updated program through mail and website Website Link (www.dspaut.com)

2. Copy and paste the downloaded program to the device via USB

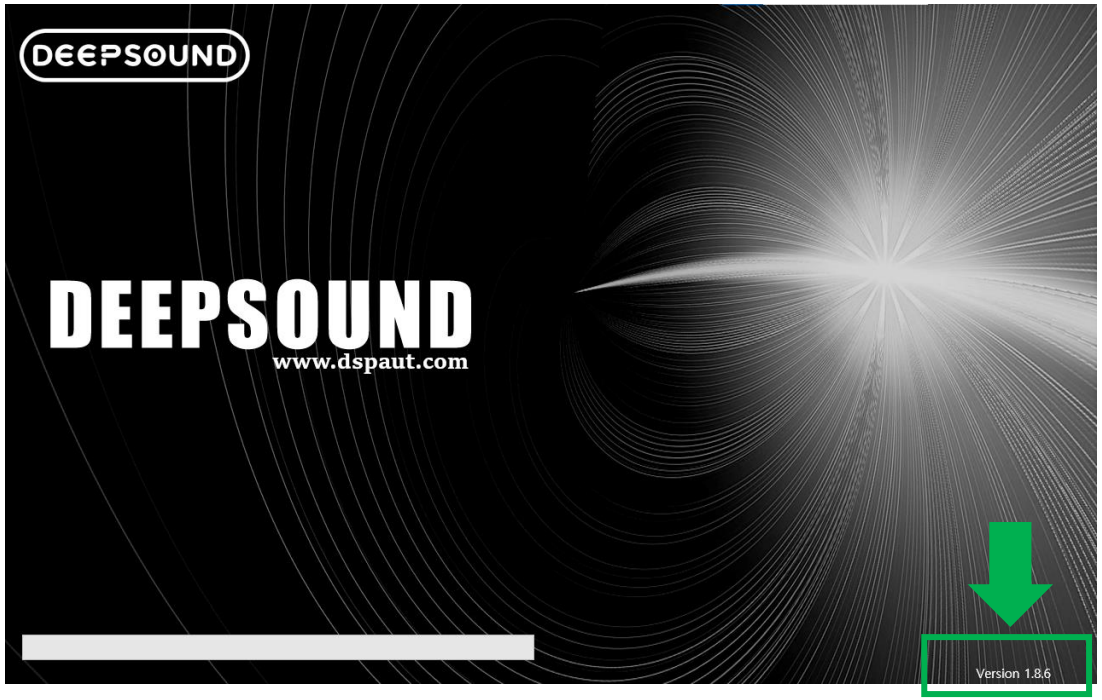
3. Double-click the update program to run



4. When the window appears, click the Install button



5. After running the program, check the version at the bottom right



- You must use the mouse and keyboard when working.
- Overwrite the program in the previously installed location.

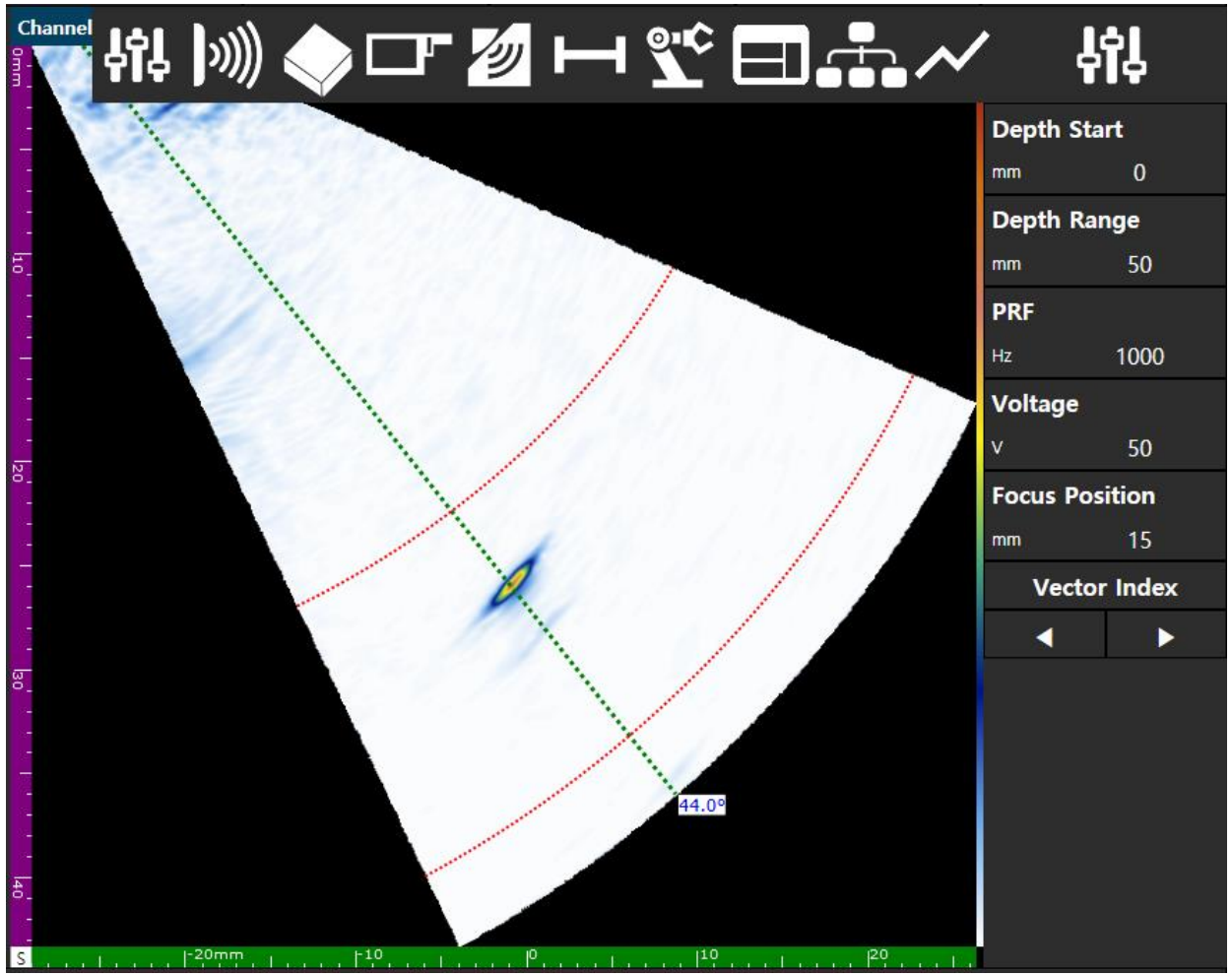
Program Introduction Menu

1

General

Right Menu

Right Menu – General



A general menu consists of a list of commonly manipulated and primarily used items.

Depth Start - Used to set where the near field and depth ranges start.

Depth Range - A list to set the inspection range.

Pulse repeat frequency (PRF) – A list to set the PRF.

Voltage – set from 25V to 160V.

Focus Position - A list of settings to increase focusing in the desired position.

Vector Index - A function to move a line to a desired position among Vectors.

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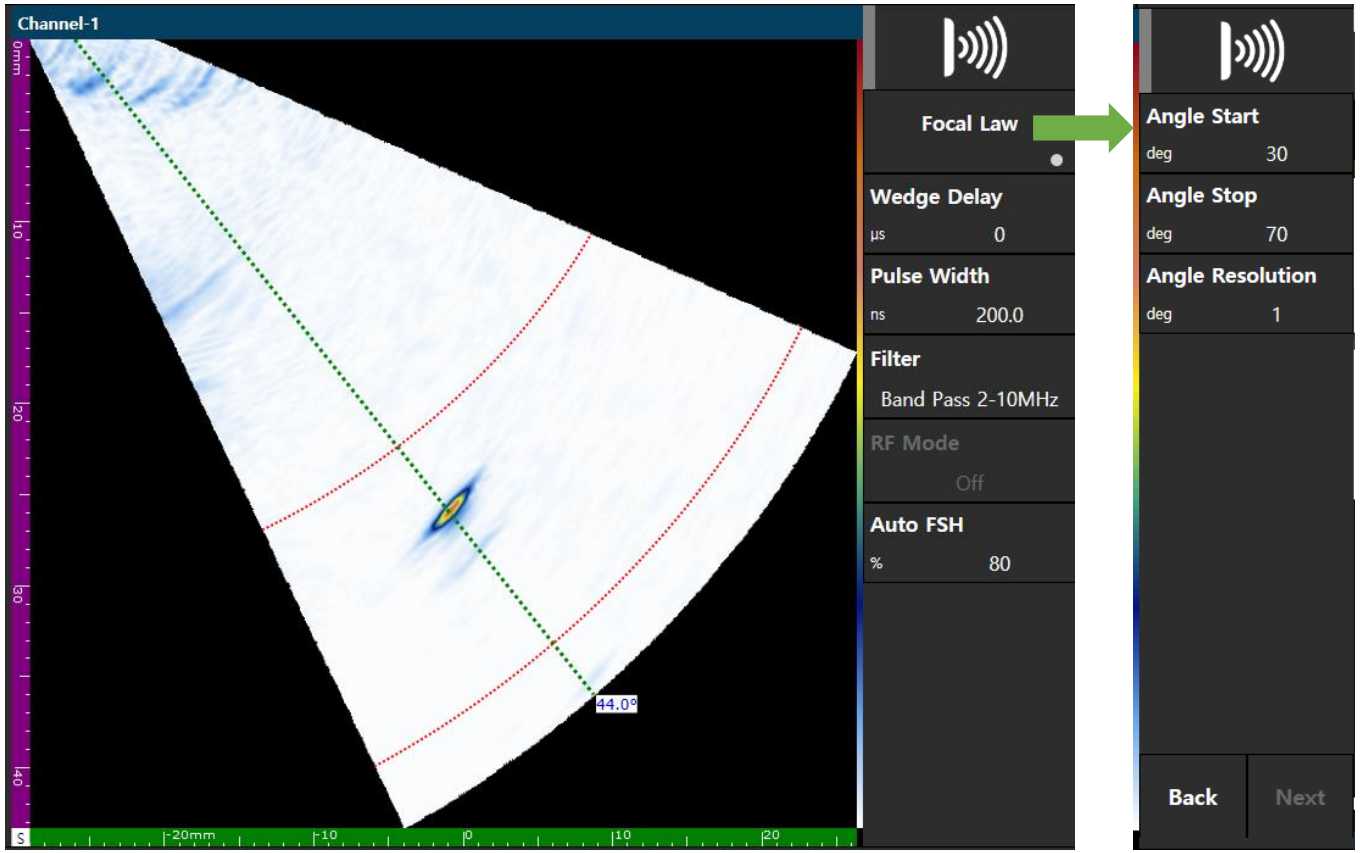
Pulse

Right Menu

Right Menu – Pulse



Pulse consists of lists affecting Focal Law and Pulse.

Focal Law – A list that sets the Angle and Resolution when clicked.

Wedge Delay – A list to set Delay values for the Wedge.

Pulse Width – A list that converts the frequency value into pulse width and enters it (1000 / 5MHz = 200ns).

Filter – a list to select and set among Band, Low, and High.

RF Mode – A list that is activated when TOFD or Conventional is selected and is switched by clicking

Auto. FSG – A list to set values that can be raised by Auto

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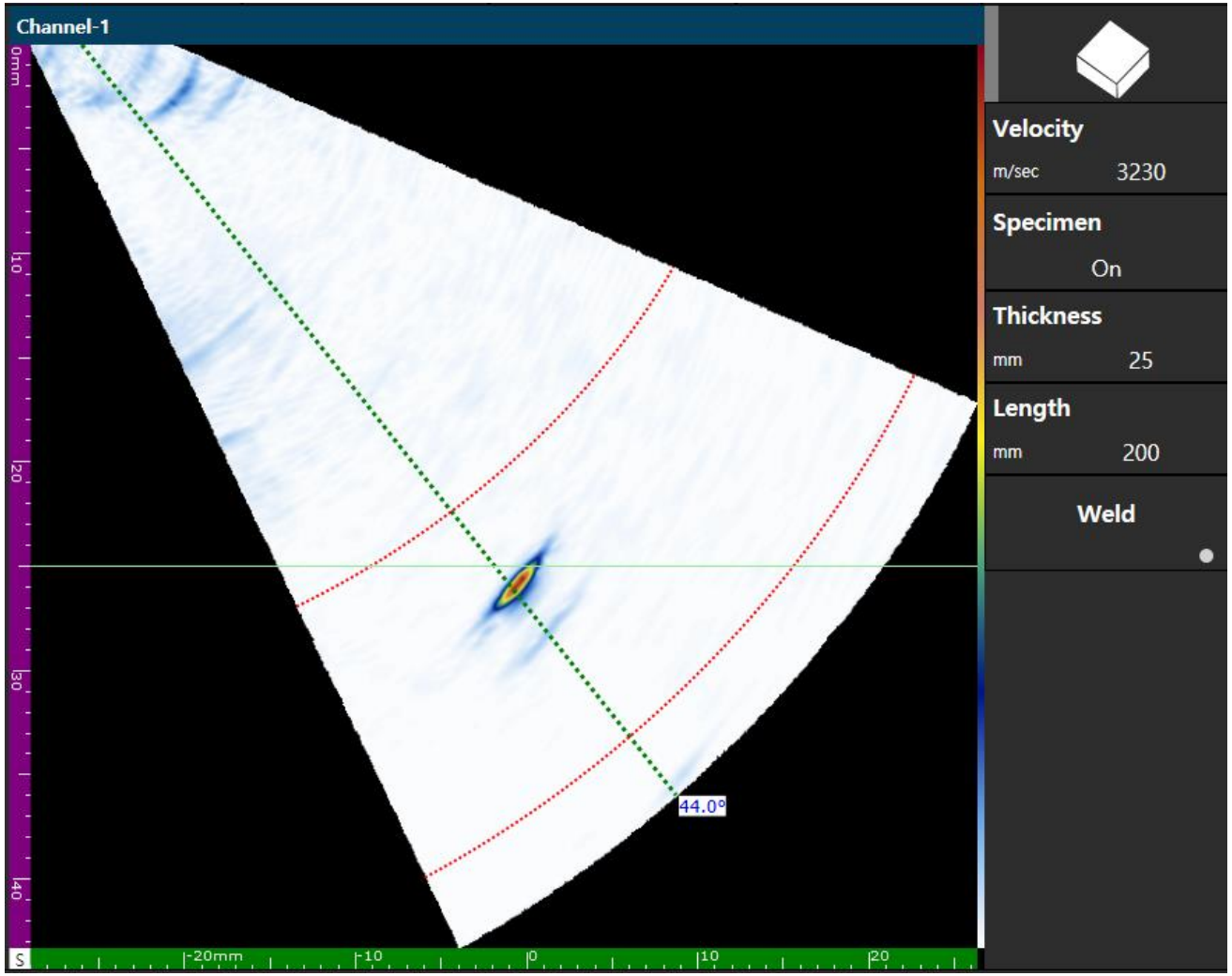
3

Specimen & Weld

Right Menu

Right Menu – Specimen



Specimen is a list that can set Velocity, On/Off, Thickness, and Weld.

Velocity - Enter the ultrasonic velocity value for the material.

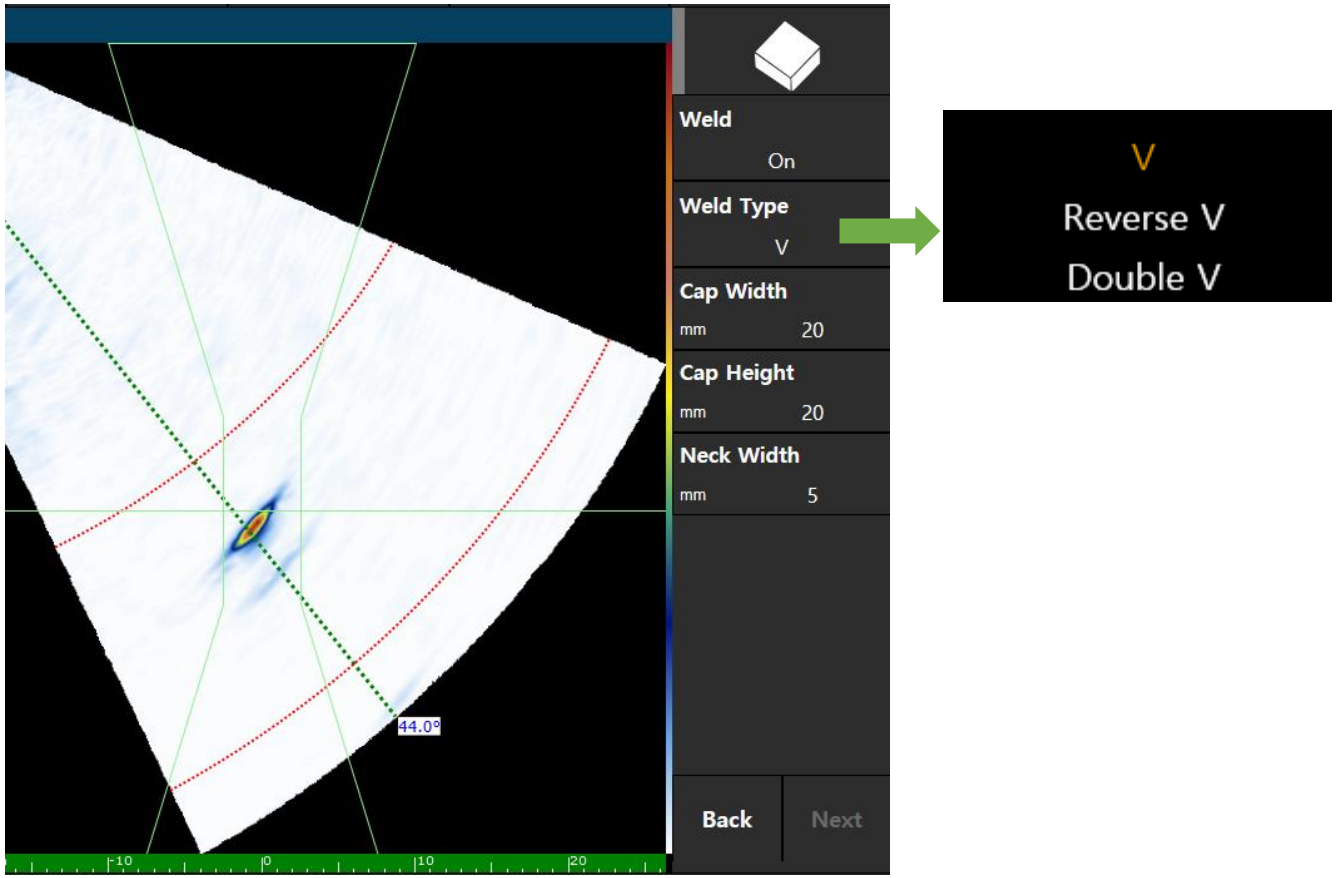
Specimen – Skip expression and thickness display based on Thickness.

Thickness – Enter a thickness value for the material.

Length – to be removed

Weld – Go to the list where you type Weld.

Right Menu – Weld



After clicking Weld, it switches to the setting page, and you can set it to the type you want.

Weld – A function that can turn on/off the picture displayed on the S-scan.

Weld Type – V / Reverse V / Double V, which is selected and expressed.

Weld - Distinguish the operation target by Cap / Neck / Root.

Cap – the upper part of the weld (Width/Height)

Neck – body part of welding (Width)

Root – The lower part of the weld (Width/ Height)

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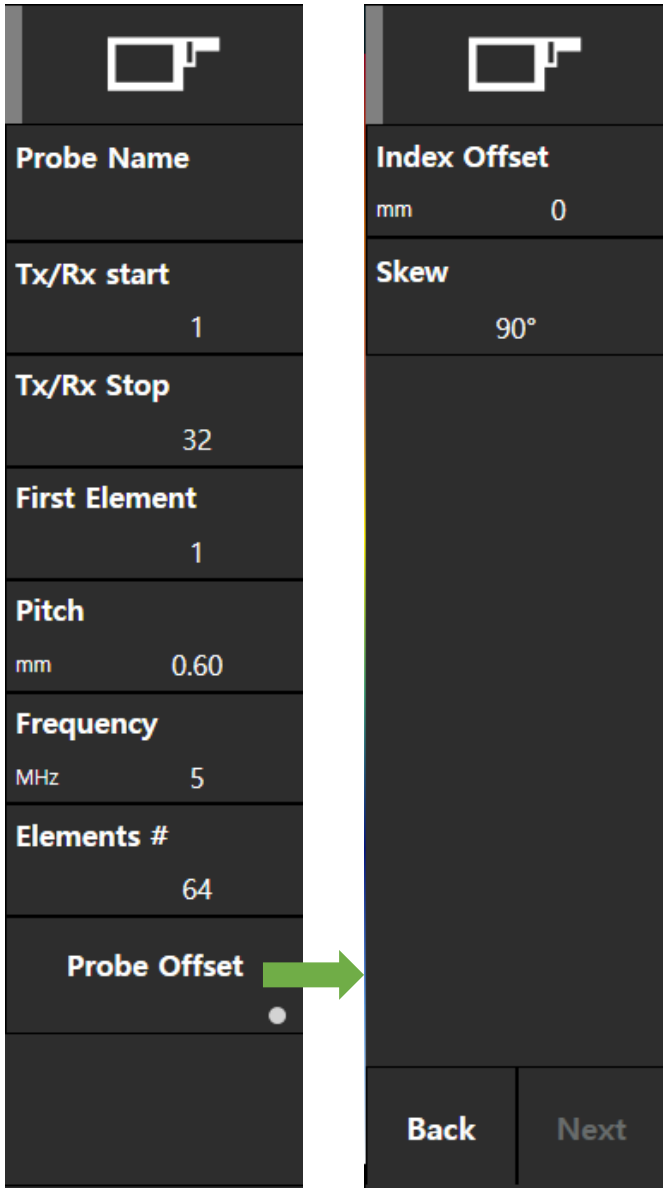
4

Probe & Wedge

Right Menu

Right Menu – Probe



Probe information can be set in the corresponding list.

Probe Name – Can be entered and edited.

Tx/Rx Start – List to set Element Start.

Tx/Rx Stop – List to set Element Stop.

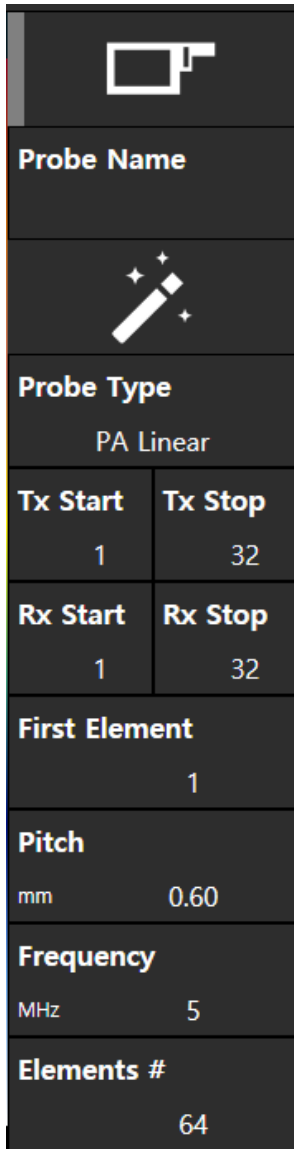
First Element – This function is required when using Multi Probe, and you must enter the element value of the second starting probe.
(For details, see Multi Ch)

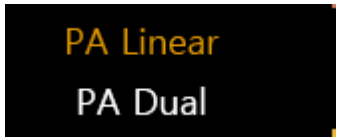
Pitch – This is a list to enter the spacing between elements.

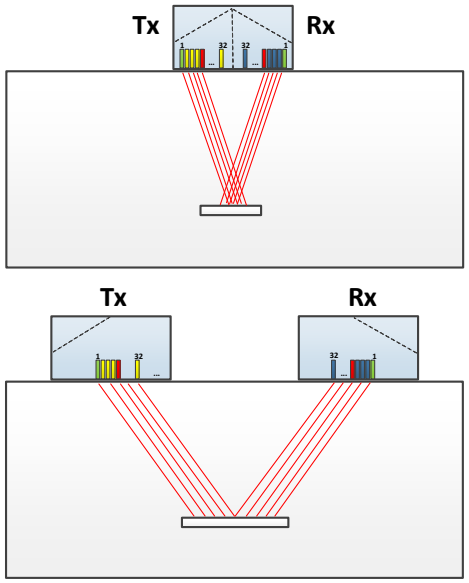
Frequency – This is a list to enter the probe frequency.

Element # - This is a list to enter all elements of the probe.

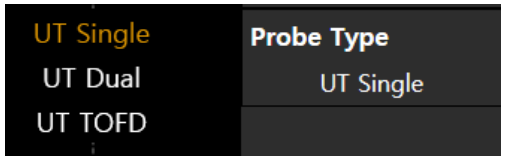
Right Menu – Probe type

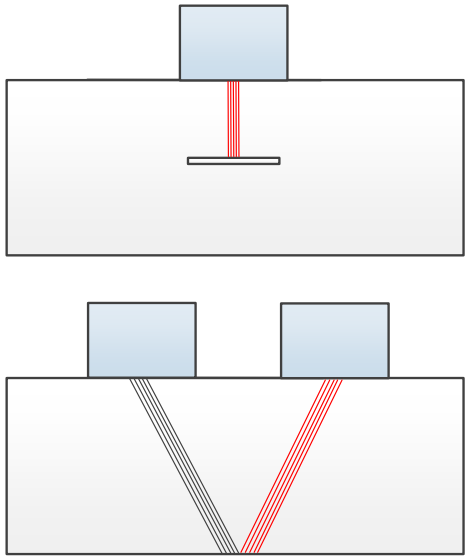






PA Dual





Probe type UT

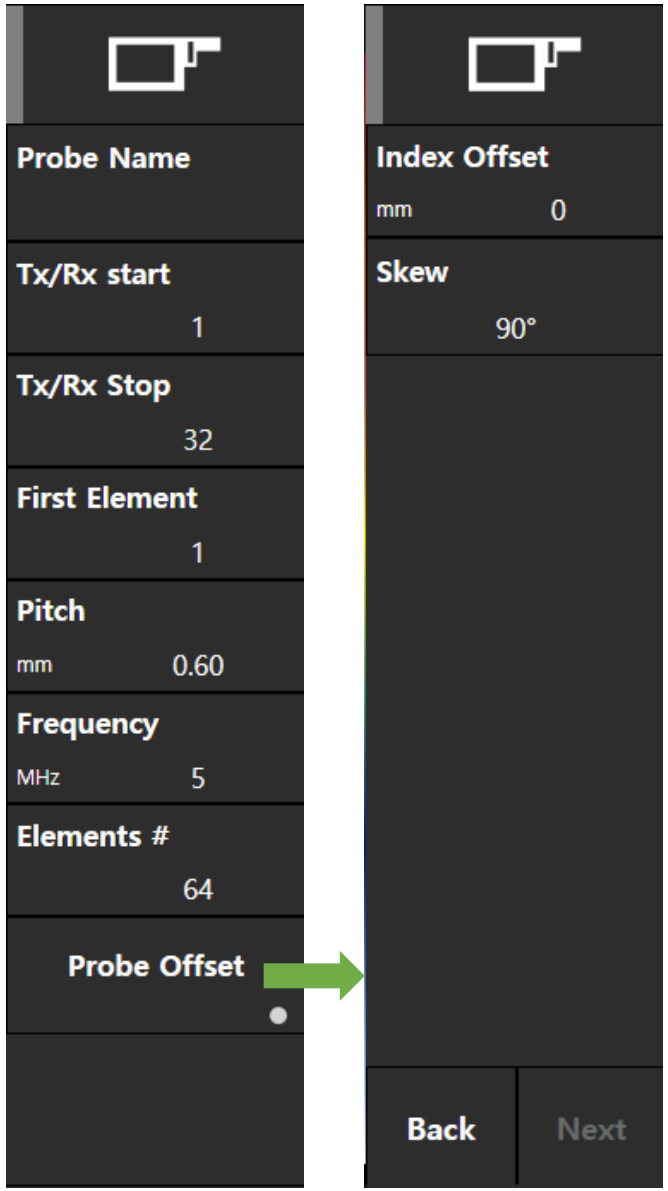
The probe type is determined by the list selected in Config.

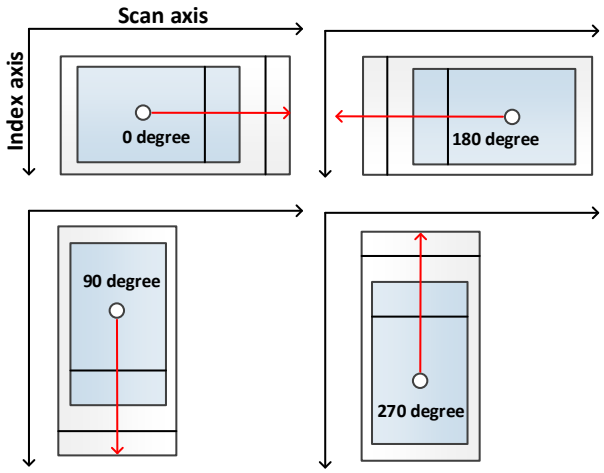
If PA is selected, the list of probe types consists of PA Linear / PA Dual.

LA does not have a configured list.

If Conventional is selected, the Probe type is Single UT / TOFD.

Right Menu – Probe Offset





Probe Offset is a list to enter the probe and interval based on the center of the weld bead.

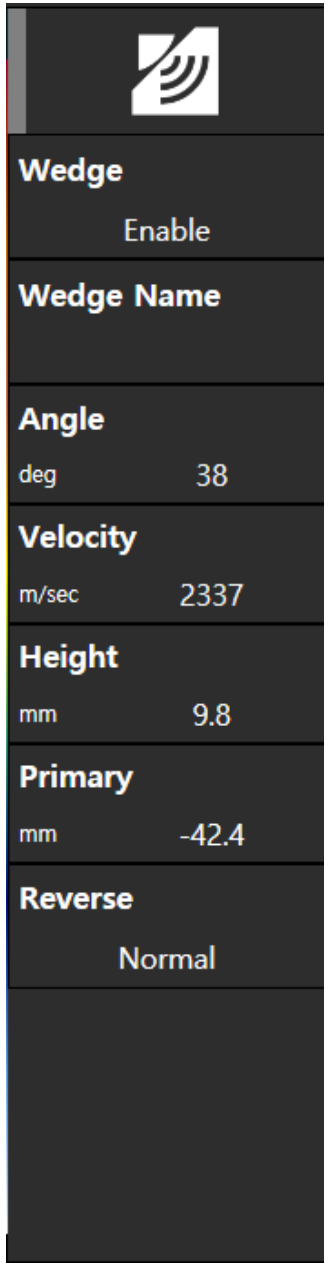
Index Offset – This is a list that sets the probe interval based on Index Axis.

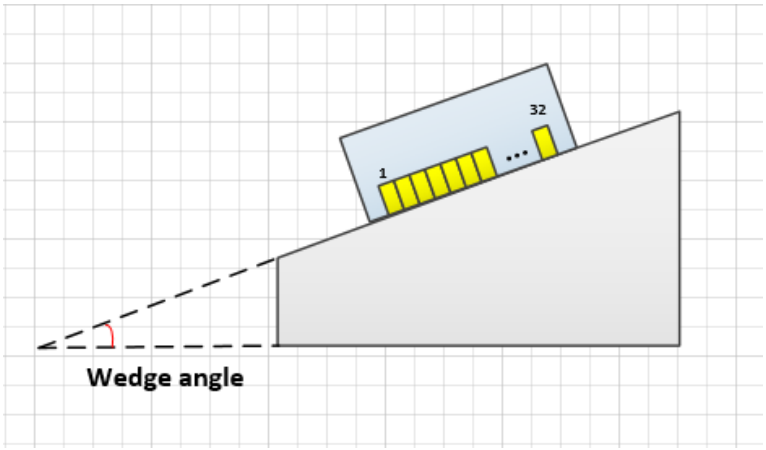
Skew – This is a list that determines the direction of the probe, and it is 0/90/180/270.

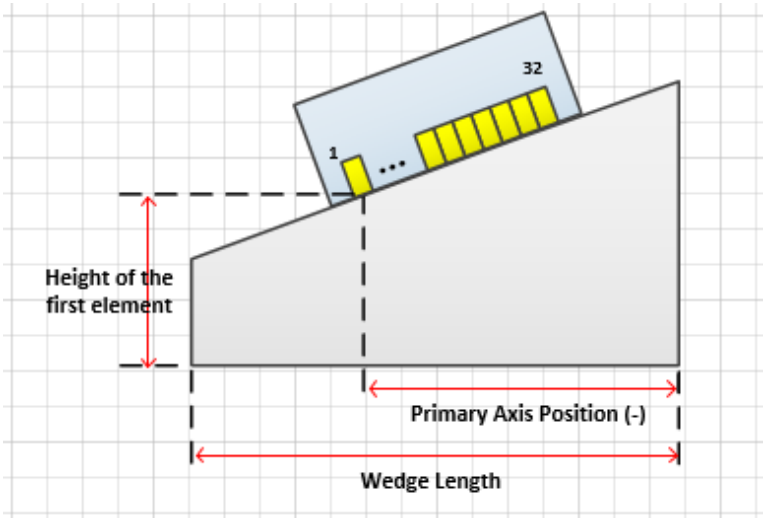
Skew Angle can determine the direction by Encoder's Scanner type.

For One Line, only 90/270 can be used, and for Raster, 0/90/180/270 can be used.

Right Menu – Wedge







This is a list to enter Wedge information.

Wedge – Apply information using Wedge On/Off.

Wedge name – Can be entered and edited.

Wedge Reverse – A function used when the direction of the probe mounted on the wedge is reversed.

*Description of Wedge replaces the picture.

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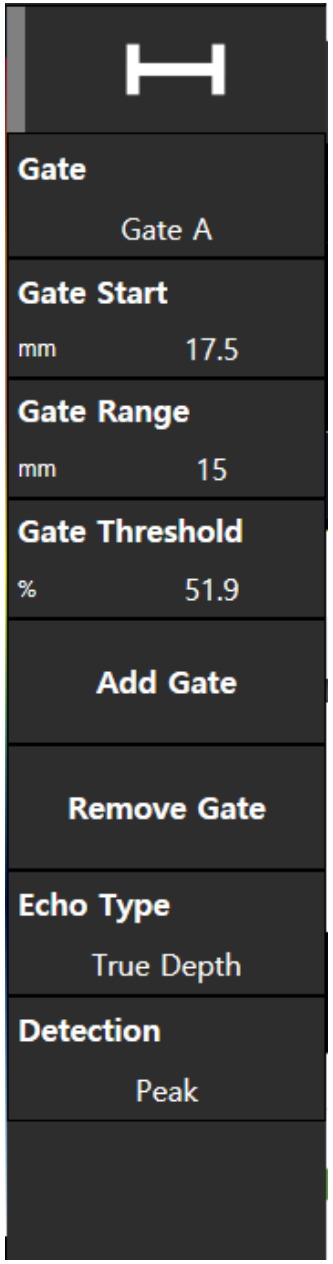
Gate

Right Menu

Right Menu – Gate



Gate is a function that can be used in various places such as location information on defects, data collection range, standards, etc.

Gate – Gate is composed of a total of 3 (A, B, I).

Gate Start - You can set the starting position of the selected Gate.

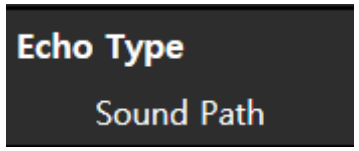
Gate Range – You can set the range of the selected Gate.

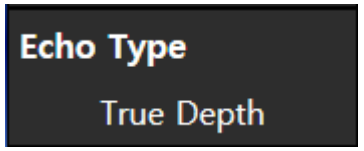
Gate Threshold – You can set the height of the selected gate.

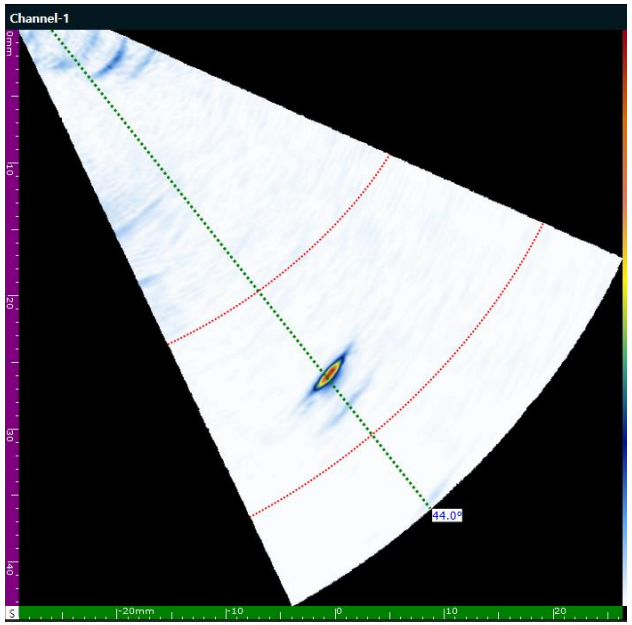
Add / Remove – This function allows you to add or delete the selected Gate.

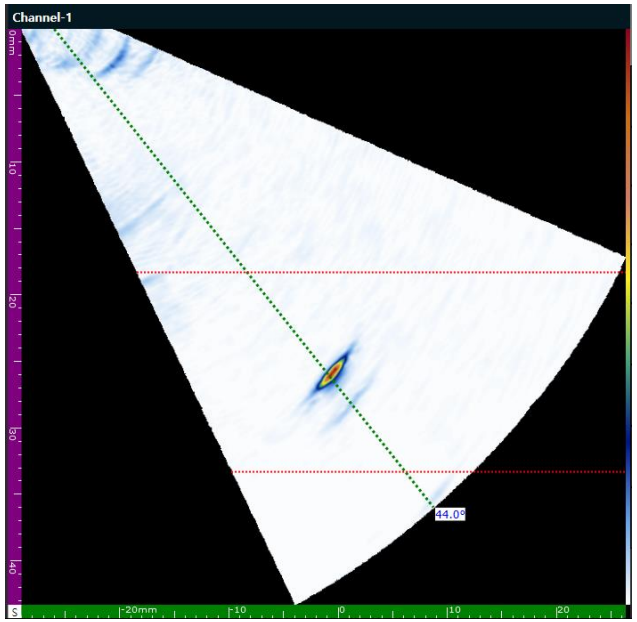
* Reflected based on the selected Gate.

Right Menu – Gate





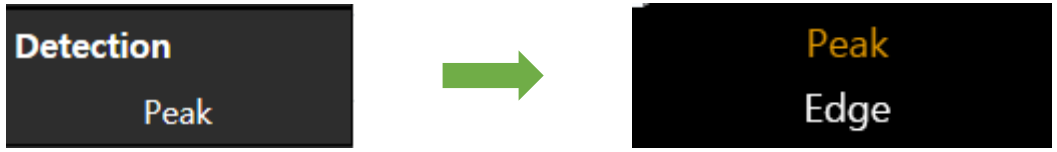




Gate Echo type is changed according to the standard.

Sound Path – A display and function that helps you measure the distance to a defect relative to the beam.

True Depth – A display and feature that helps you measure the distance to a defect based on the thickness of the material.



Detection is a list that determines the criteria for measuring Gate signals.

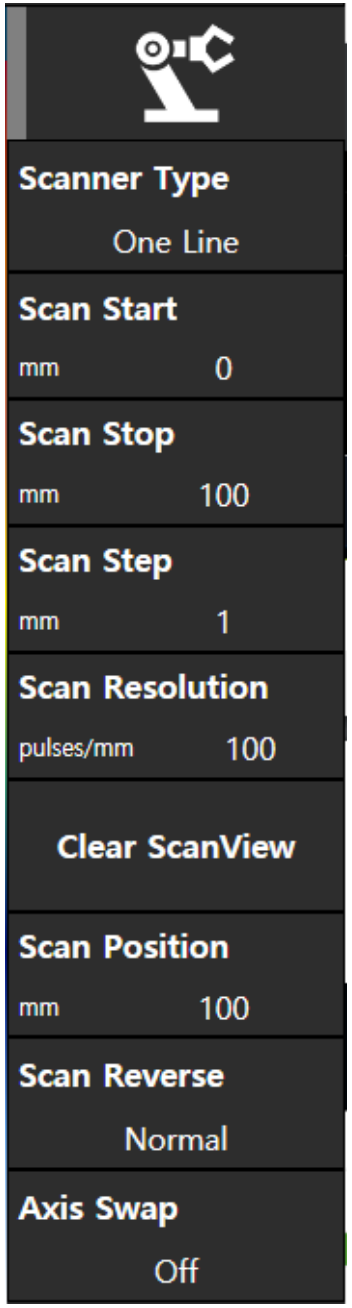
Detection consists of two types.

- Peak – The highest Amplitude position among signals within the Gate range
- Edge – The point where the gate touches among the signals within the gate range

6

Encoder

Right Menu



Right Menu – Encoder(One Line)

This is a list that occurs when One Line is selected among Encoder types.

Scanner Type – Type consists of a total of 3 types of One Line / Raster / Time.

Scan Start / Stop – A list to set the start and end position values of the Encoder.

Scan Step – A list to set the interval for Encoder movement.

Scan Resolution – A list to enter the number of pulses generated when the encoder rotates.

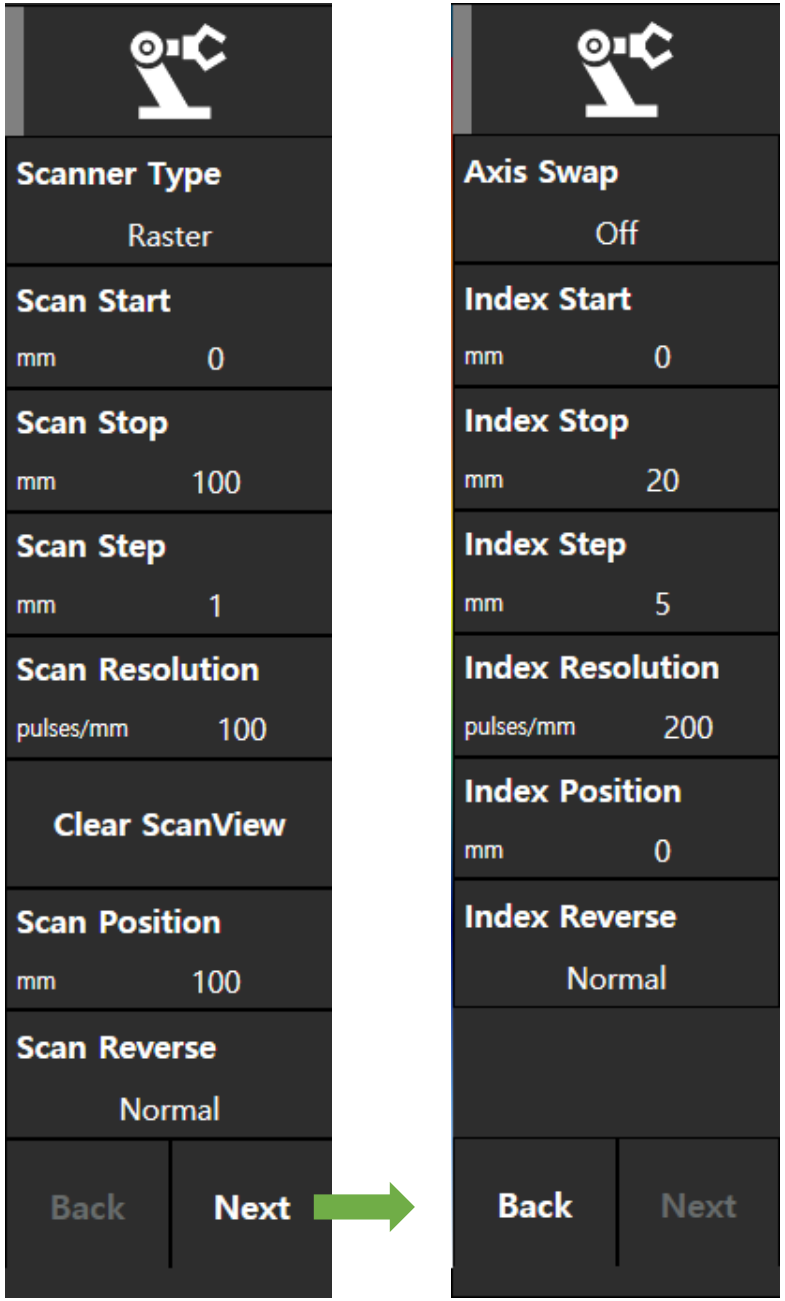
Clear ScanView – A function to initialize the collected data image.

Scan Position – A function used to change the starting position.

Scan Reverse - A function used to switch in the opposite direction.

Axis Swap – A function used when switching Axis.

Right Menu – Encoder(Raster)

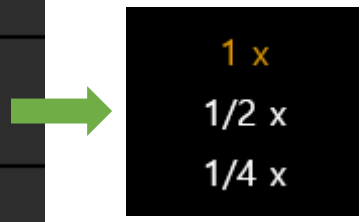


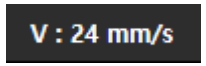
Raster is a list used for using Two Axis.

You can collect Scan / Index by using Raster.

The functions described in One Line are also reflected in the same way as in the Index.

Right Menu – Encoder(Time)





Scan Speed Check

Time is a function that can be used without Scanner (Encoder).

When set to Time, images are automatically collected according to the Scan Speed value.

Speed – This is a list that can control the scan speed, and you can select a total of three options: 1/4x1, 1/2x1, and 1x.

Clear ScanView - resets the collected image and restarts from 0mm.

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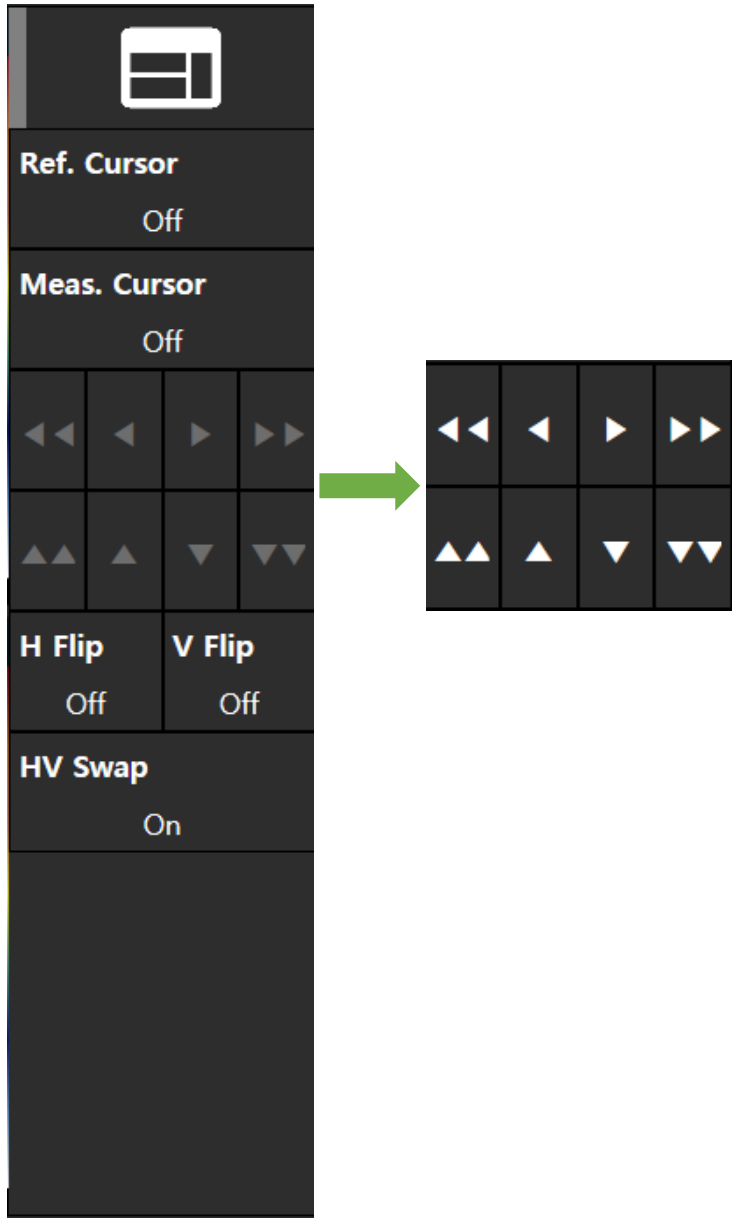
Display

Right Menu

Right Menu – Display



Display is a function affecting the screen.

Ref. Cursor – Reference Cursor On/Off function, and the position is expressed on the scan screen.

Meas. Cursor – Measurement Cursor On/Off function, and the position is expressed on the scan screen.

Cursor Control – Used to manipulate the Cursor selected on the screen.

- << big move < fine move

H Flip – H (Horizontality) Can be used to reverse the selected scan screen.

V Flip – V (Vertical) This can be used to convert the selected scan screen vertically.

HV Swap – Can be used when switching the selected scan screen using HV. (A-scan only)

Right Menu – Rulers

축 (Axis)	기본 색	모양	노트
Scan	Blue		Volumetric correction
Index	Green		N/A
Degree	Pale blue		Degree measurement
Amplitude	Light green		Uncorrected
Ultrasound	Pink		MetalPath
	Purple		True / Sound Path

Each ruler/scale has a dedicated color to help identify the different colored axes.

The following table provides a list of available rulers/scales and their associated colors and features.

The base color is an attribute of each axis, and the axis is represented by different shades of the base color.

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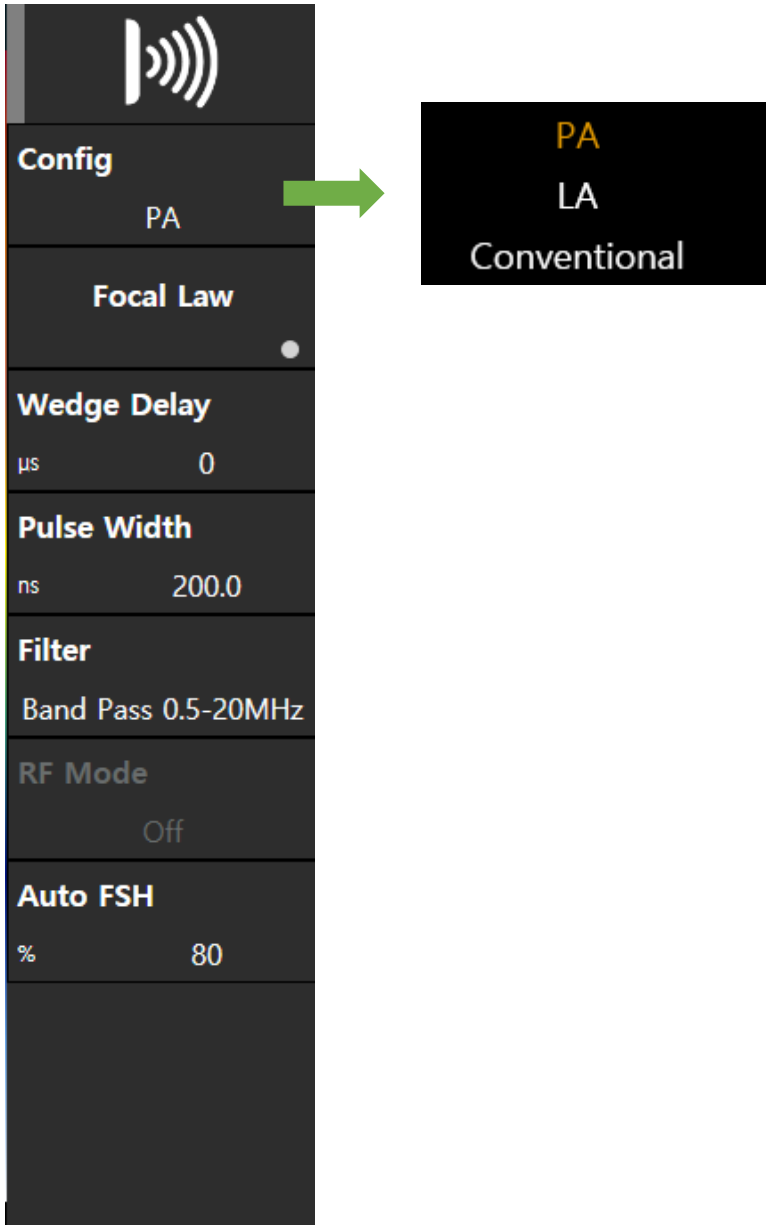
Configuration

Right Menu

Right Menu – Configuration



Configuration is a list that selects the overall configuration

Config consists of PA / LA / Conventional.

PA – As an abbreviation of Phased Array, Wedge is basically activated.

Angle can be set in Focal law.

LA – It means Linear Array and is basically composed of 0 degrees.

Conventional – It is configured to use UT

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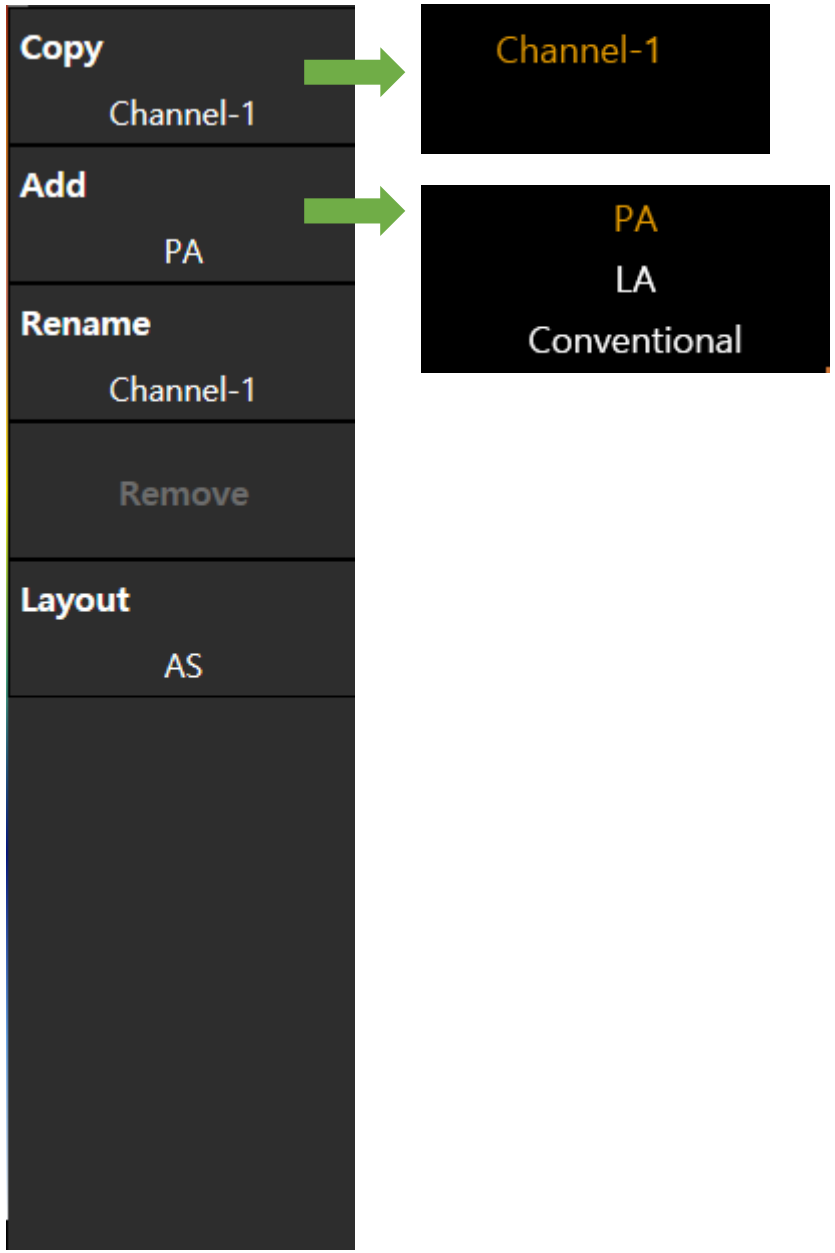
Channel Add

Right Menu

Right Menu – Channel Add



Channel Add is a list to set Channel Group.

Channels can be added by selecting the desired configuration.

Add – Click on the list to select the desired configuration and add a Channel.

Copy - Add a new Channel by copying the selected Channel.

Rename – A list of channels that can be renamed.

Remove – Activated when a Channel is added. A function to delete the selected Channel.

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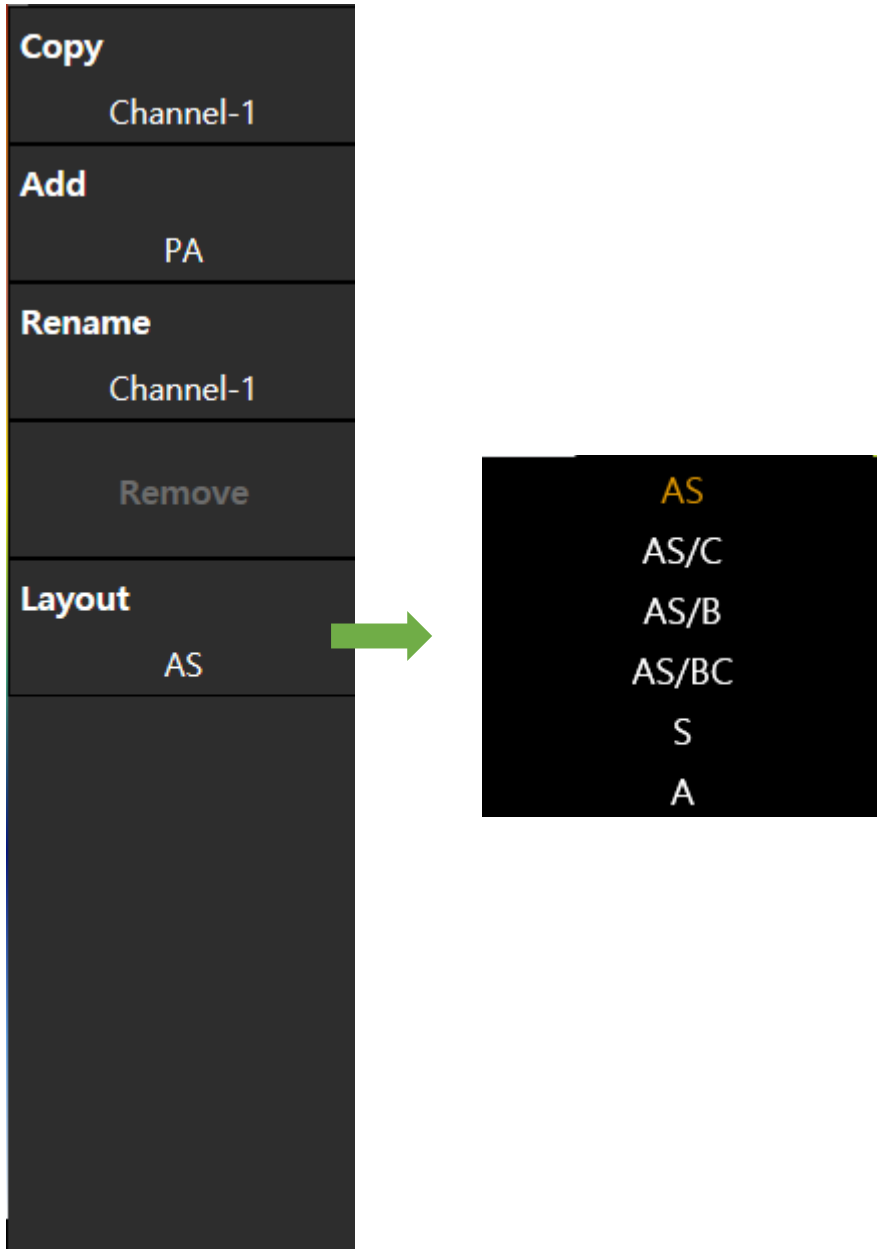
Layout

Right Menu

Right Menu – Layout



Layout can be changed by selecting from the list.

Depending on the channel configuration, the selection list changes.

Additionally, when adding a channel, it is automatically applied to the screen based on the layout.

Multiple channels can be viewed at once using Layout.

- ❖ In Channel Group, A-scan is composed of one.
- ❖ A-scan is linked to the selected channel.

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Calibration

Right Menu

Right Menu – Velocity

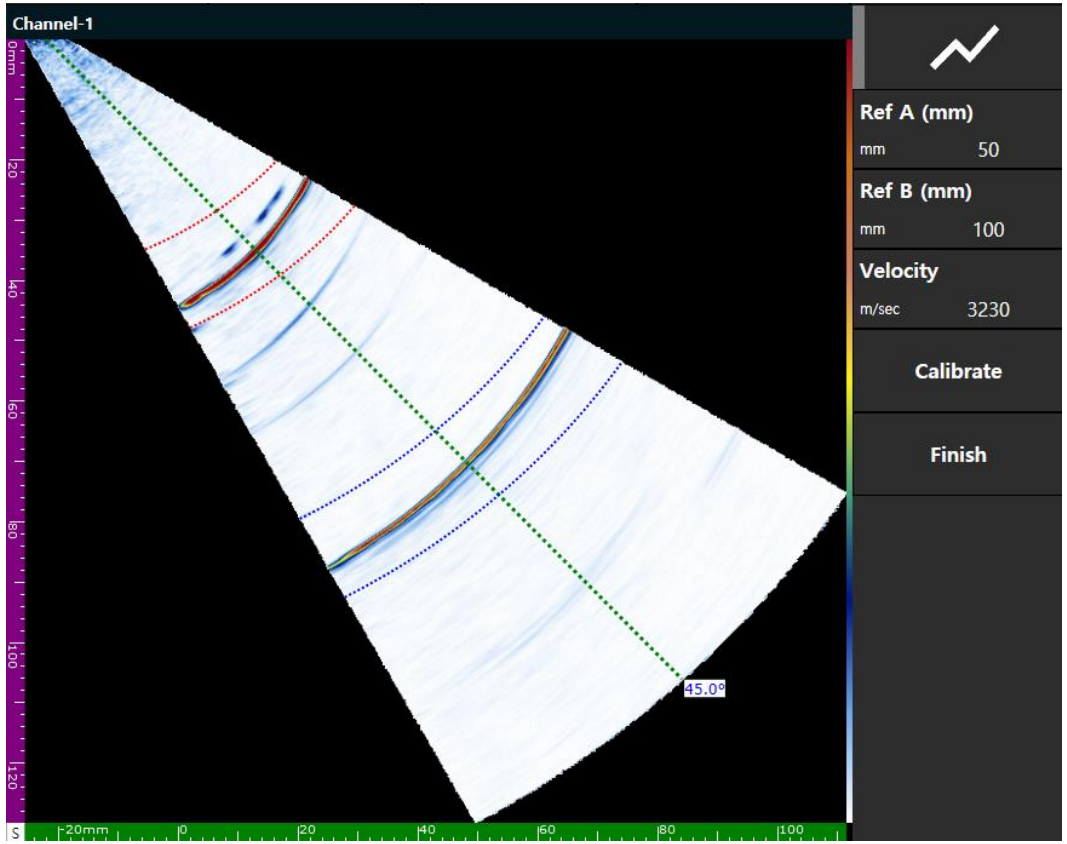


Image after calibration

Velocity is a calibration method that verifies the velocity value for a material and applies it to the equipment.

Velocity is calibrated based on the two reflected signals.

Ref A - A list to enter the position value of the first reflected signal.

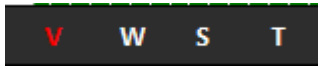
Ref B – A list to enter the position value of the second reflection signal.

Velocity – Changed values can be checked after calibration.

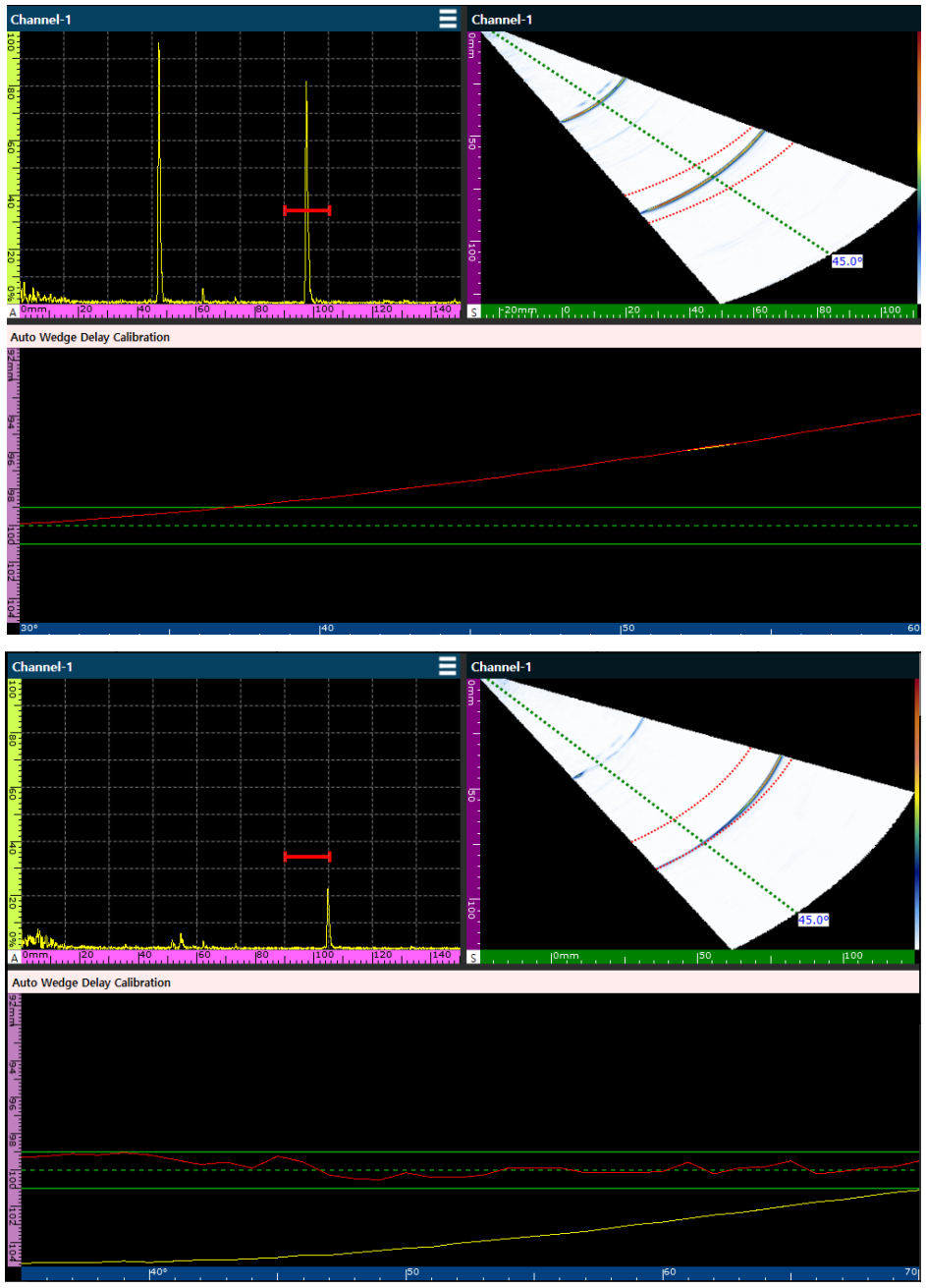
Calibrate – Calibration progress button.

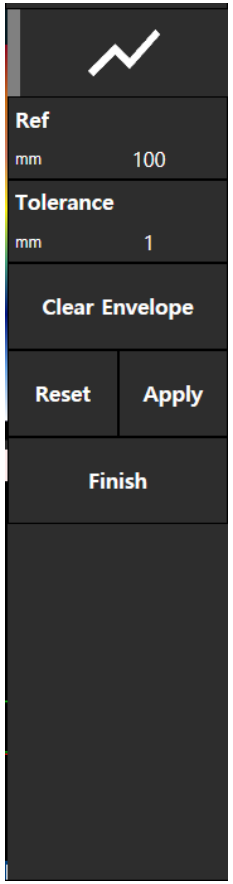
Finish – This is the list used when finishing the calibration.

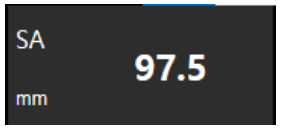
*V is lit at the bottom after calibration is completed.



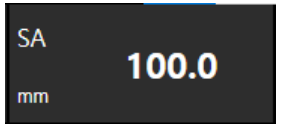
Right Menu – Wedge delay







Before Calibration



After Calibration

Wedge Delay is used to recalibrate different Delay values for each Vector.

Enter the Ref value based on the first reflected signal so that there should be a red line inside the green line.

Ref – Enter the distance value of the signal to be calibrated.

Tolerance – sets tolerance and applies to the green line.

Clear Envelope - Reconfigures the red line in the calibration window.

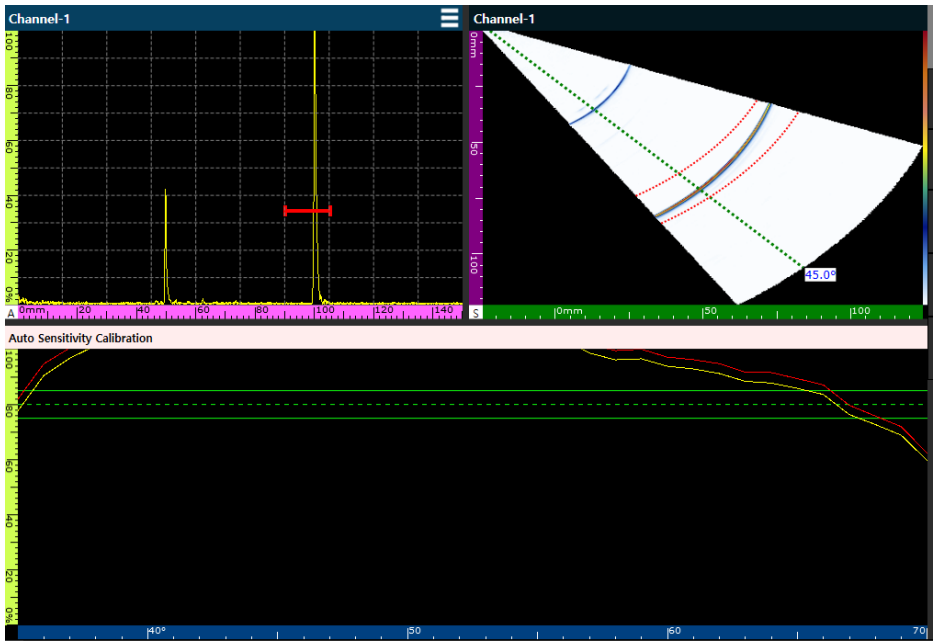
Reset - resets the calibration.

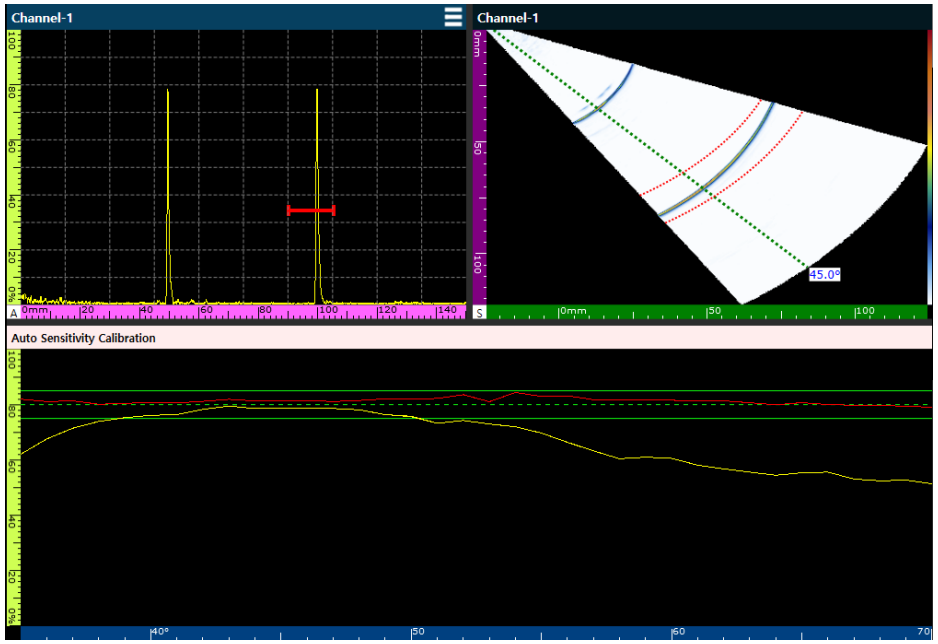
Apply – This button applies the calibration values.

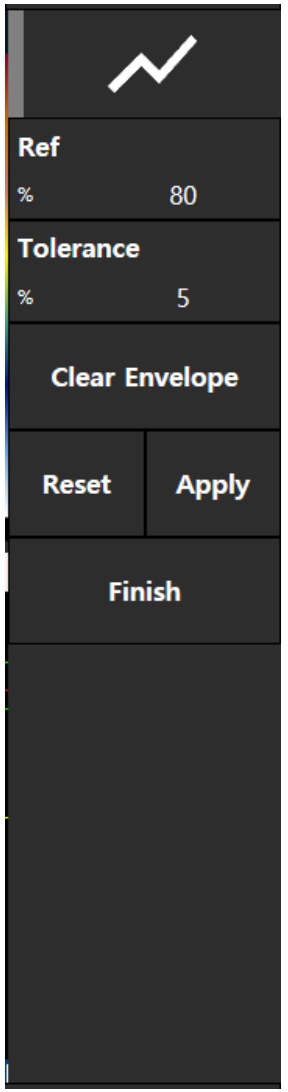
Finish – End of WD Calibration

*W lights up at the bottom after calibration is complete.

Right Menu – Sensitivity







Sensitivity is a function to calibrate the sensitivity of all vectors to a constant level.

Ref – Enter the value that is the standard for Amplitude.

Tolerance – Enter a tolerance to specify a range. (Applies to the green range.)

Clear Envelope - Reconfigures the red line in the calibration window.

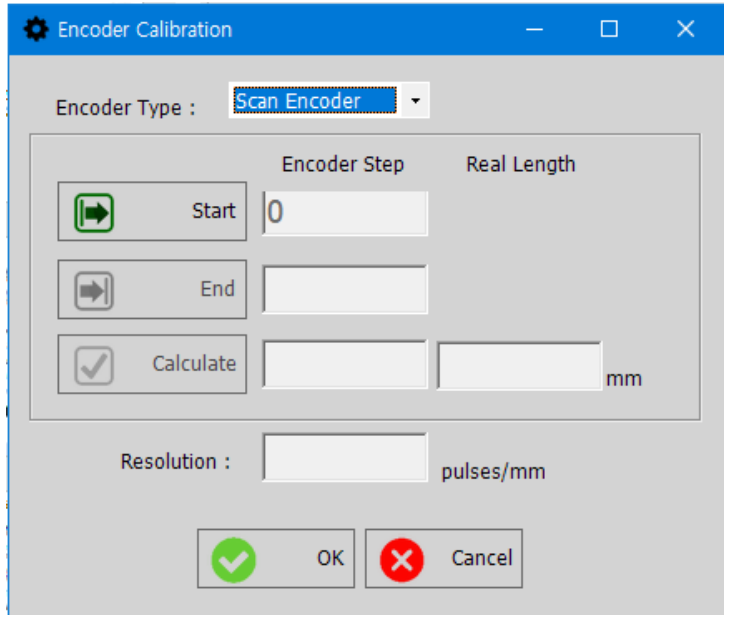
Reset – Reset Calibration

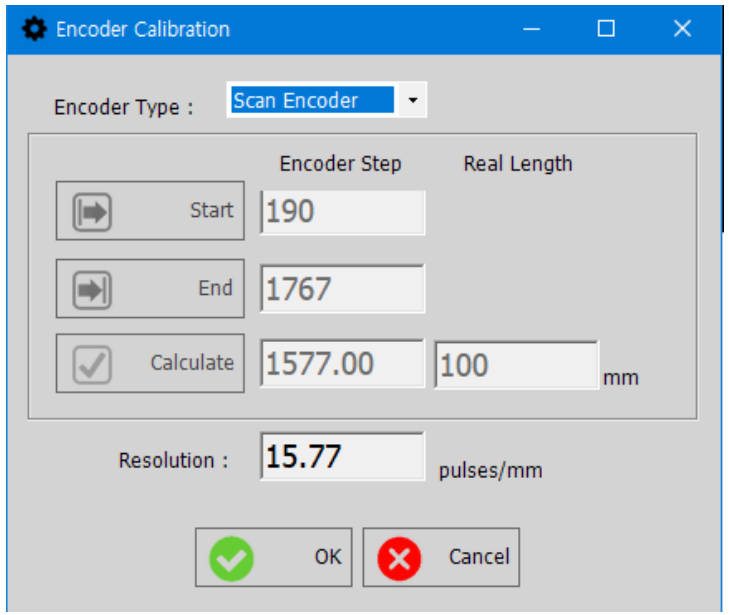
Apply – This button applies the calibration values.

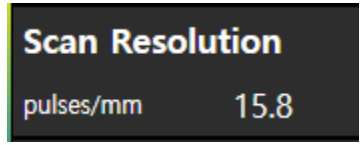
Finish – End of Sensitivity Calibration

* S is lit at the bottom after calibration is completed.

Right Menu – Encoder







Encoder Calibration is to calibrate the exact operation of the encoder to the device.

Click Encoder Calibration, the following window appears.

Select Encoder Type – Axis to calibrate the desired type.

Start – Click to apply the starting position value.

End – When the Encoder moves to the end position, click to apply the value

Calculate – Click Calculate after entering the value of the actual distance traveled
(Ex. When moving 100mm, enter a value of 100.)

Resolution – It is automatically calculated after clicking Calculate, and the value is applied when clicking OK.

Program Introduction Menu

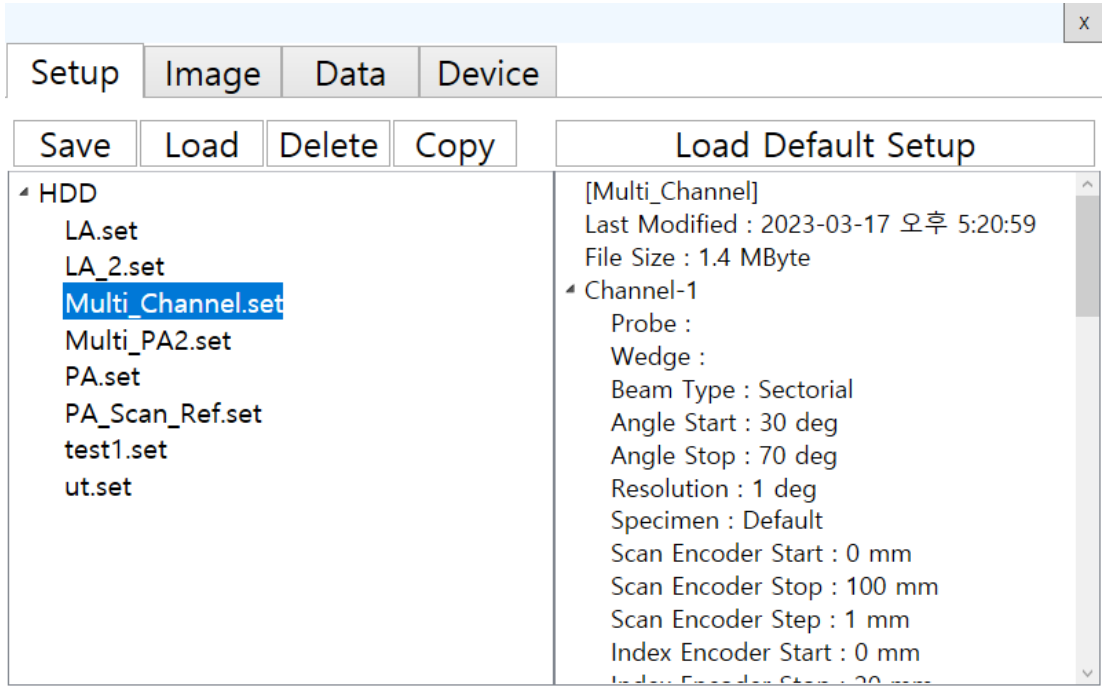
SEONGSAN
(주) 성산연구소

1

Preferences

Left Menu

Left Menu – Preferences(Setup)



Click the icon to open the Setup window.

Setup is a list to save setting values and call saved files.

Save - Function to save the set values.

Load – Ability to load the selected list.

Delete – Ability to delete the selected list.

Copy - Ability to copy selected list to connected USB.

Left Menu – Preferences(Image)

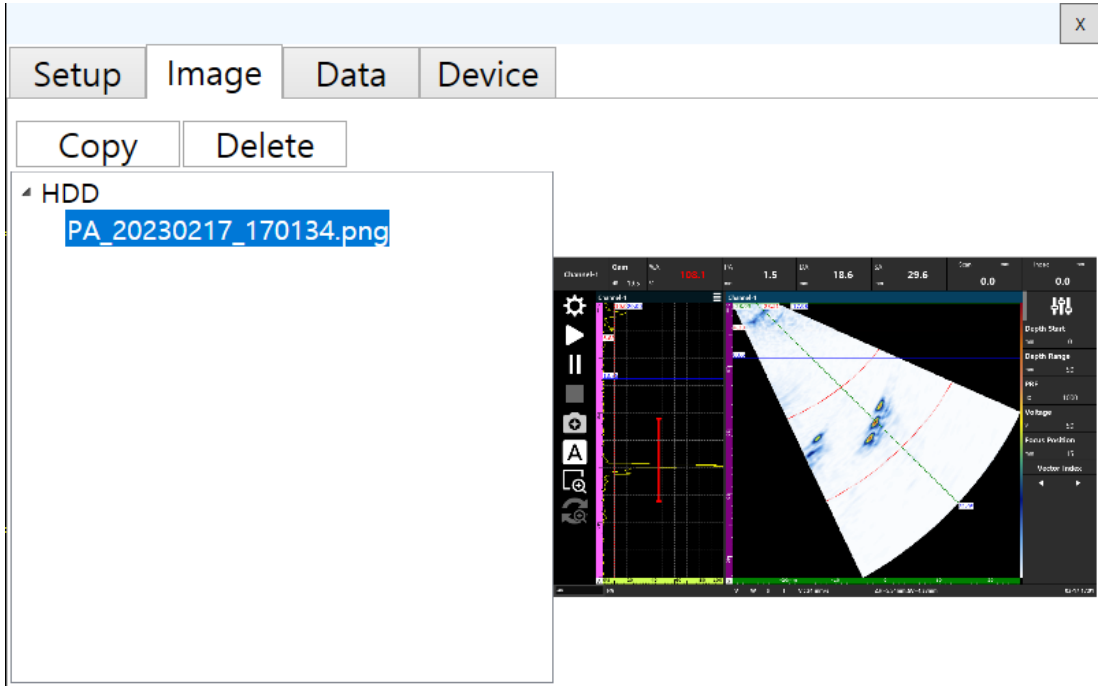


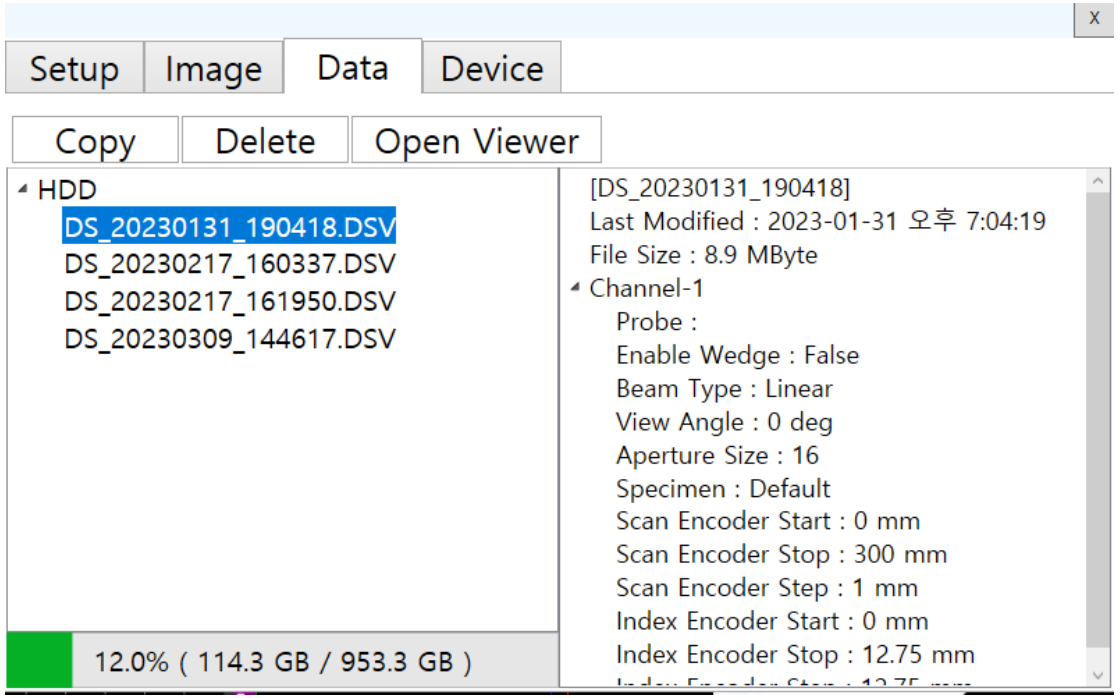
Image is a list of pictures automatically saved using the Screen Short function.

Preview occurs when you click on the list you want.

Copy - Ability to copy selected list to connected USB.

Delete – Ability to delete the selected list.

Left Menu – Preferences(Data)



Data stores the collected data and can view the configuration through preview.

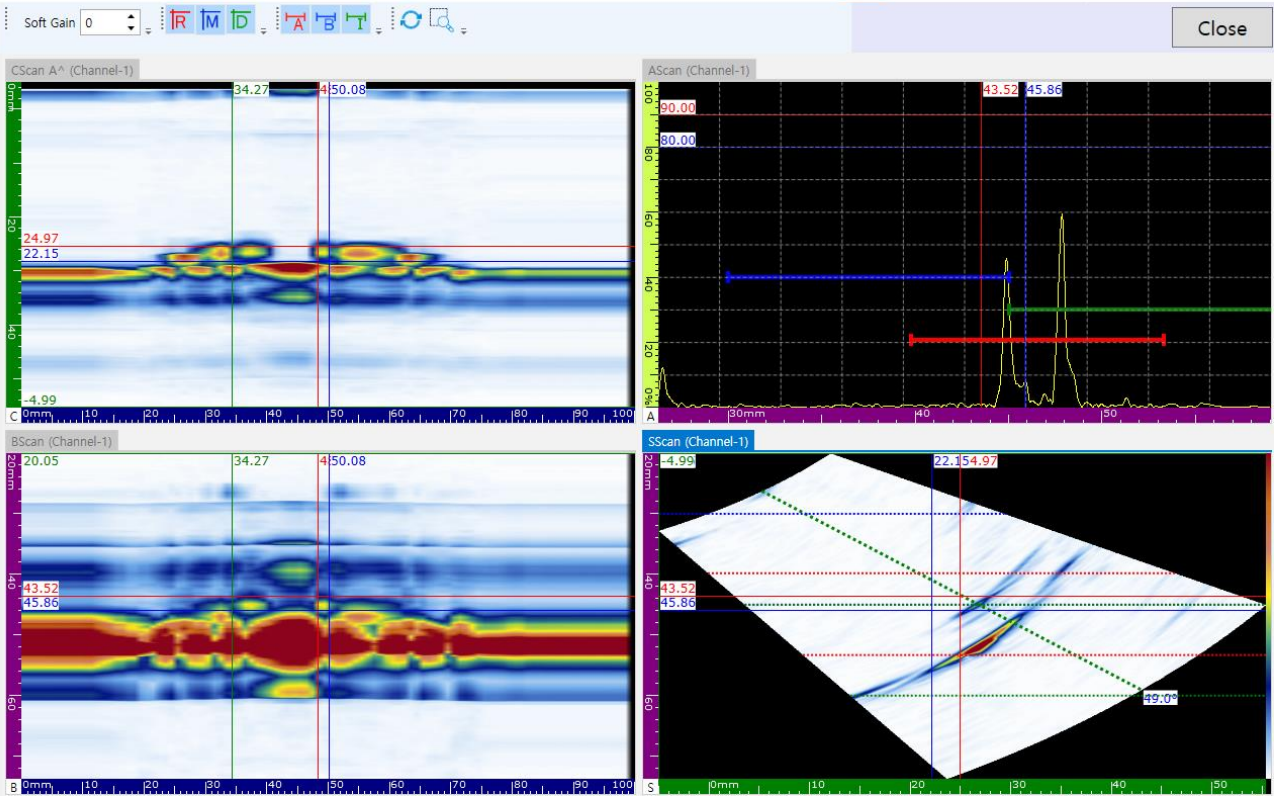
Copy - Ability to copy selected list to connected USB.

Delete – Ability to delete the selected list.

Open Viewer – Ability to simply view the selected list in the Viewer window.

A screen to check the capacity of the equipment's storage device

Left Menu – Preferences(Open Viewer)



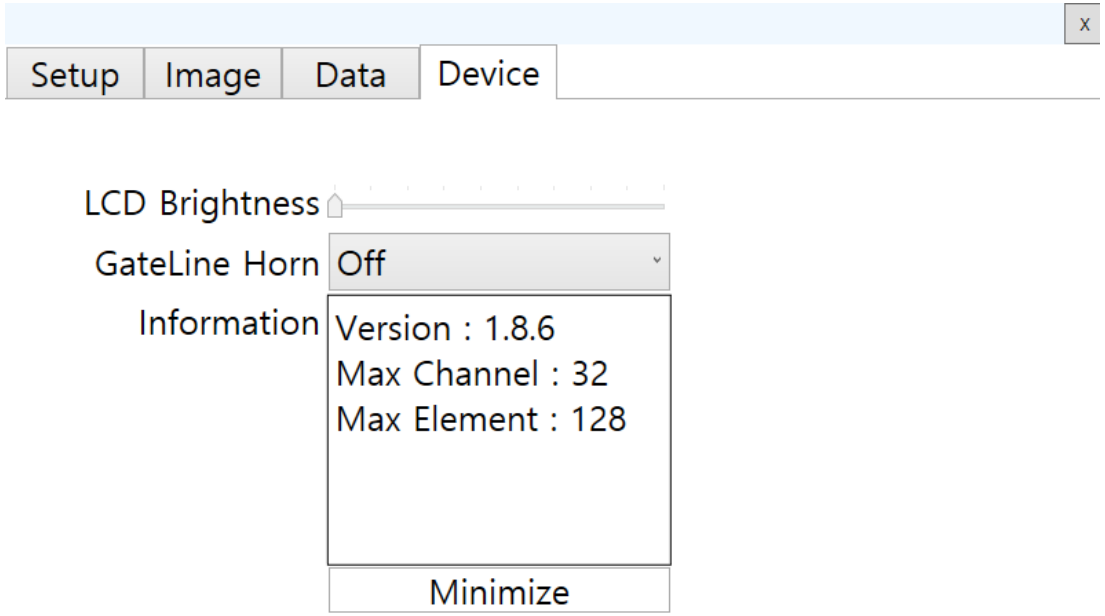
A function that allows you to enter the Viewer when you click Open Viewer and easily view the selected data.

Please use a mouse for this operation.

Consists of Gain Control, Cursor, Gate, and Zoom functions.

You can close the screen by using Close.

Left Menu – Preferences(Device)



Device is a list that can change the settings for the equipment.

LCD Brightness – The ability to adjust the brightness of the device.

GateLine Horn – It is configured as On/Off, and when a signal is applied to the Gate, the equipment informs the Horn.

Information – Simple specifications and program version of the equipment can be known.

Minimize – The ability to minimize programs and bring them to the Windows 10 screen.

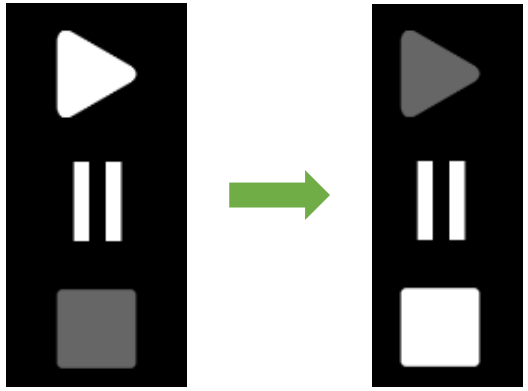
SEONGSAN
(주) 성산연구소

2

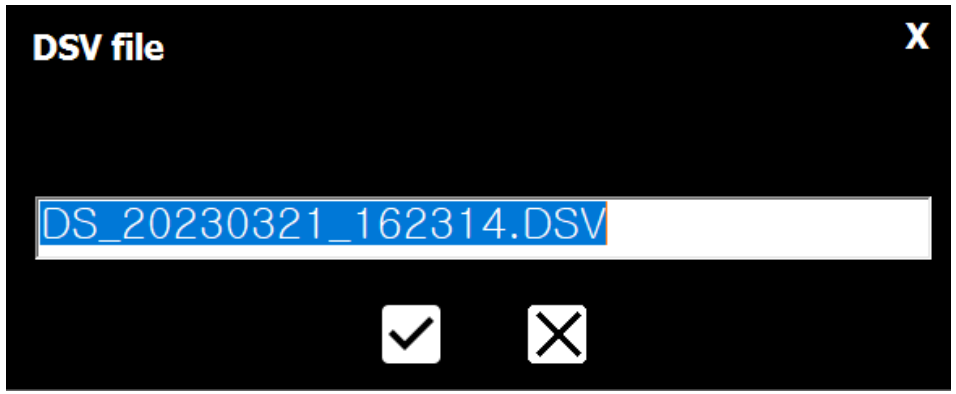
Inspection Button

Left Menu

Left Menu – Inspection Button



Inspection Mode ON



Inspection consists of a total of 3 buttons.

Start – When clicked, it switches to Inspection Mode, and some parameters cannot be set.

Pause – Used as Freeze function when not in Inspection Mode.

- ❖ In case of Inspection Mode, even if the encoder moves, data is not collected, and it is a function that helps to collect again from the moved position.

Stop – Normally inactive, but activated when proceeding to Inspection Mode.

If you click Stop when collection is complete, a window for naming the data appears.

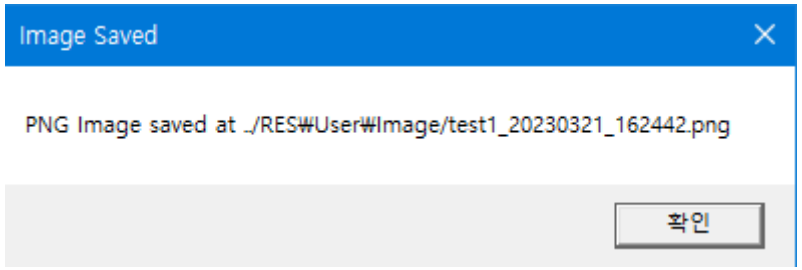
SEONGSAN
(주) 성산연구소

3

Screen Short

Left Menu

Left Menu – Screen Short



This function saves the entire screen as an image when clicking Screen Short.

The image has a .png extension, and the folder location is as follows.

❖ C:\DEEPSOUND\DSVision\Bin\RES\User\Image

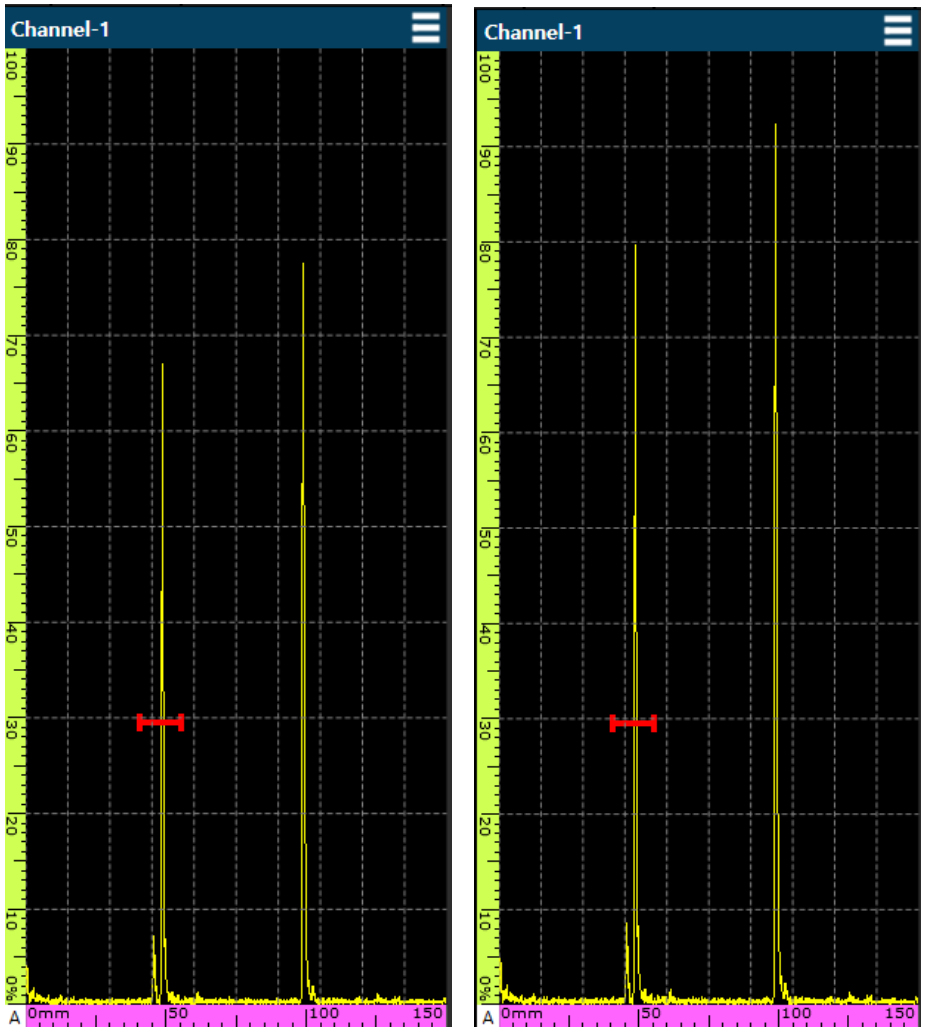
SEONGSAN
(주) 성산연구소

4

Auto Gain

Left Menu

Left Menu – Auto Gain A

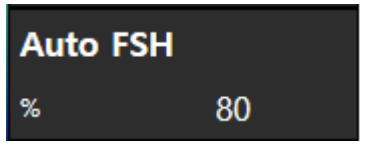


Apply auto gain

Auto Gain is a function that increases the Amplitude of the signal to the set value.

Auto Gain recognizes signals coming within the A Gate range.

Based on the value set in the Auto FSH list.



Setting Button

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(주) 성산연구소

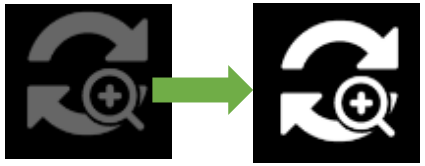
5

Zoom & Zoom reset

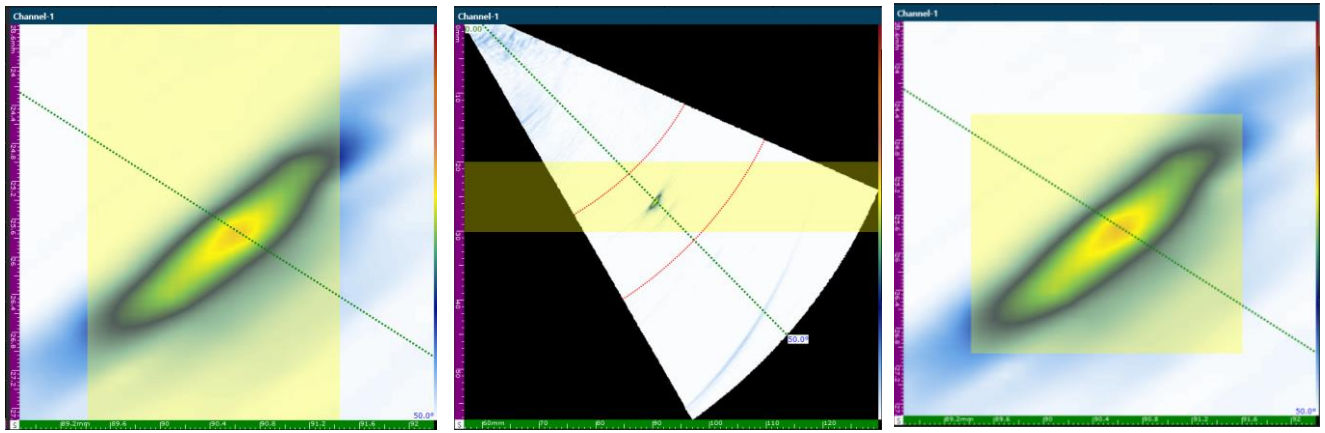
Left Menu

Left Menu – Zoom & Zoom reset

Zoom Mode



Reset



Zoom type

Zoom is a function to enlarge to check the exact size when measuring defects.

Zoom – When you click Zoom, it turns orange, and then touch and drag to designate and use the range in the desired direction.

Zoom type – You can use zoom in 3 types horizontally, vertically, and diagonally.

Reset – A function that resets all screens using Zoom to their original state.

Program Introduction Menu

01 >> Install Menu

02 >> Right Menu

03 >> Left Menu

04 >> **Top Menu**

05 >> Feature Menu

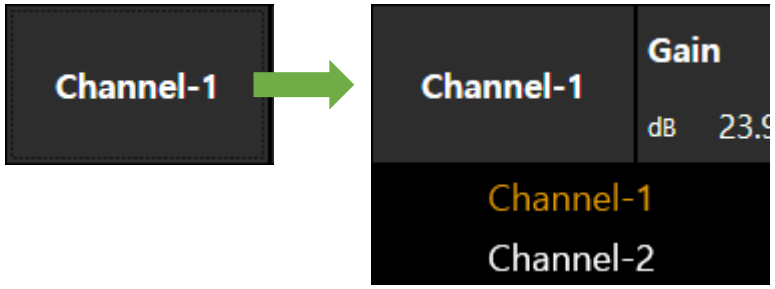
SEONGSAN
(주) 성산연구소

1

Channel

Top Menu

Top Menu – Channel Select



Channel Select is a list that is activated when Channel is added.

This function allows you to select channels easily.

When you click the upper left corner, you can select a channel as shown in the picture.

Parameter list is switched based on the selected channel.

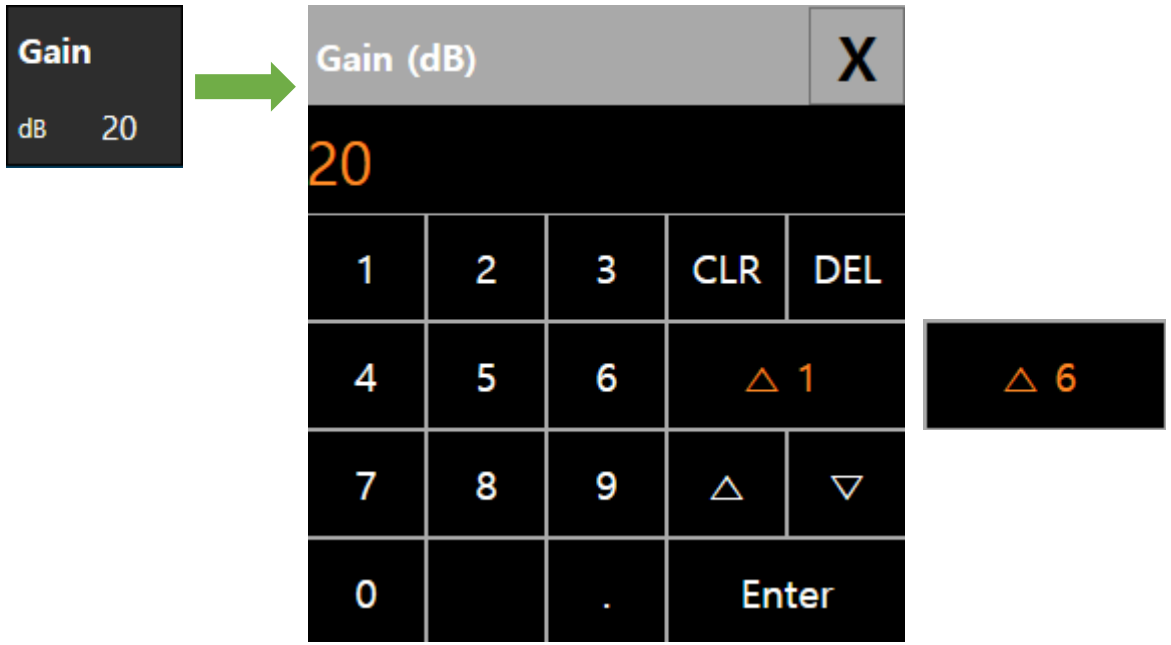
SEONGSAN
(주) 성산연구소

2

Gain

Top Menu

Top Menu – Gain



Gain Control pops up an input window when clicking the button.

Gain is applied only after entering a value and clicking the Enter key.

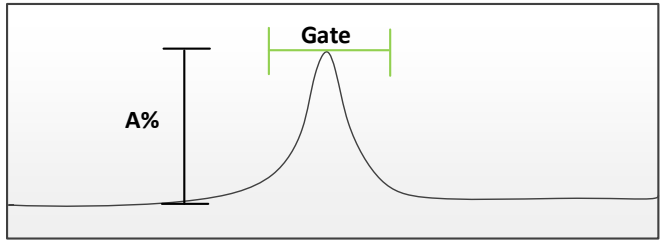
It can be set to raise only 6dB and can be controlled up to 10dB / 0.1dB.

3

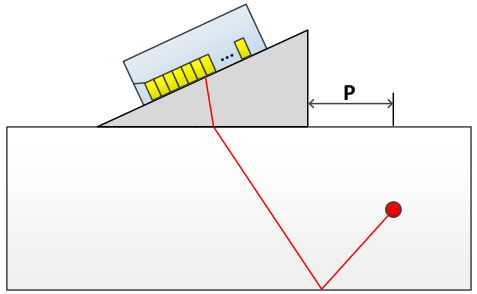
Information

Top Menu

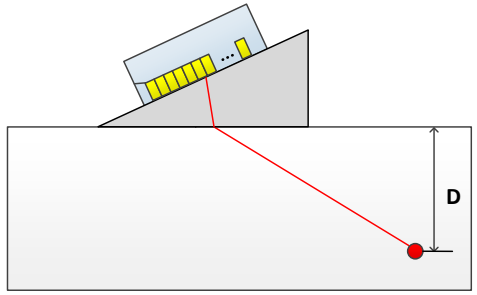
Top Menu – Information(Gate)



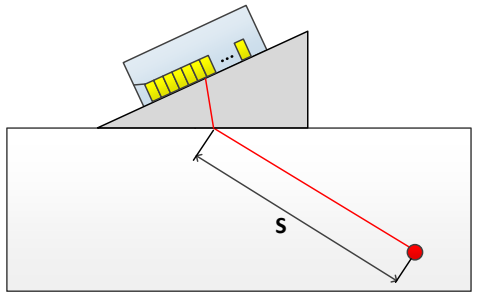
% picture



P picture



D picture



S picture

Information is a list to check Gate and Encoder location information.

Gate is divided into 4 types: Amplitude %, Primary, Depth, and Sound.

Amplitude (%) – means the height of the signal.

Primary(P) – Means the distance between the defect and the probe.

Depth (D) – means the distance located based on the depth of the defect.

Sound(S) – means the distance located based on the sound of the defect.

- ❖ Information is displayed based on the selected Gate, and is also changed by the Gate selected for A-scan.

Top Menu – Information(Encoder)

Encoder Information is a function to display the moved distance value.

If it moves more than the set scan and index distance, it warns in red.

Program Introduction Menu

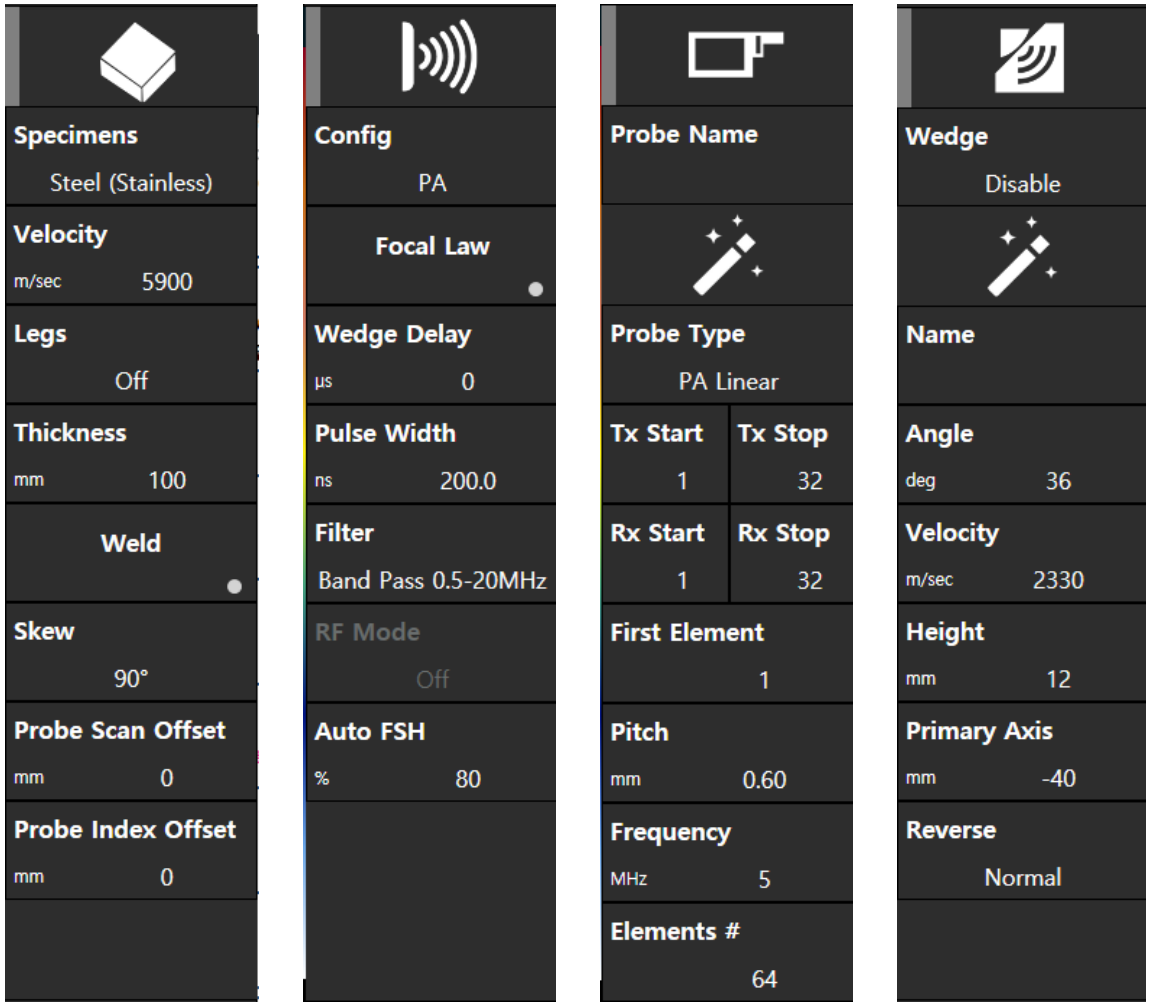
SEONGSAN
(주) 성산연구소

1

Operation

Feature Menu

Feature Menu – Operation



Operation is the contents of how to set, starting with Config.

Specimen List – Enter the speed value of the material and the material type or weld type.

Pulse List – Select Config, Enter Angle range.

List of Probes – Probe type selection and wizard selection or direct entry.

Wedge List – Selection and direct entry using Wizard.

End of basic setting.

DEEPSOUND

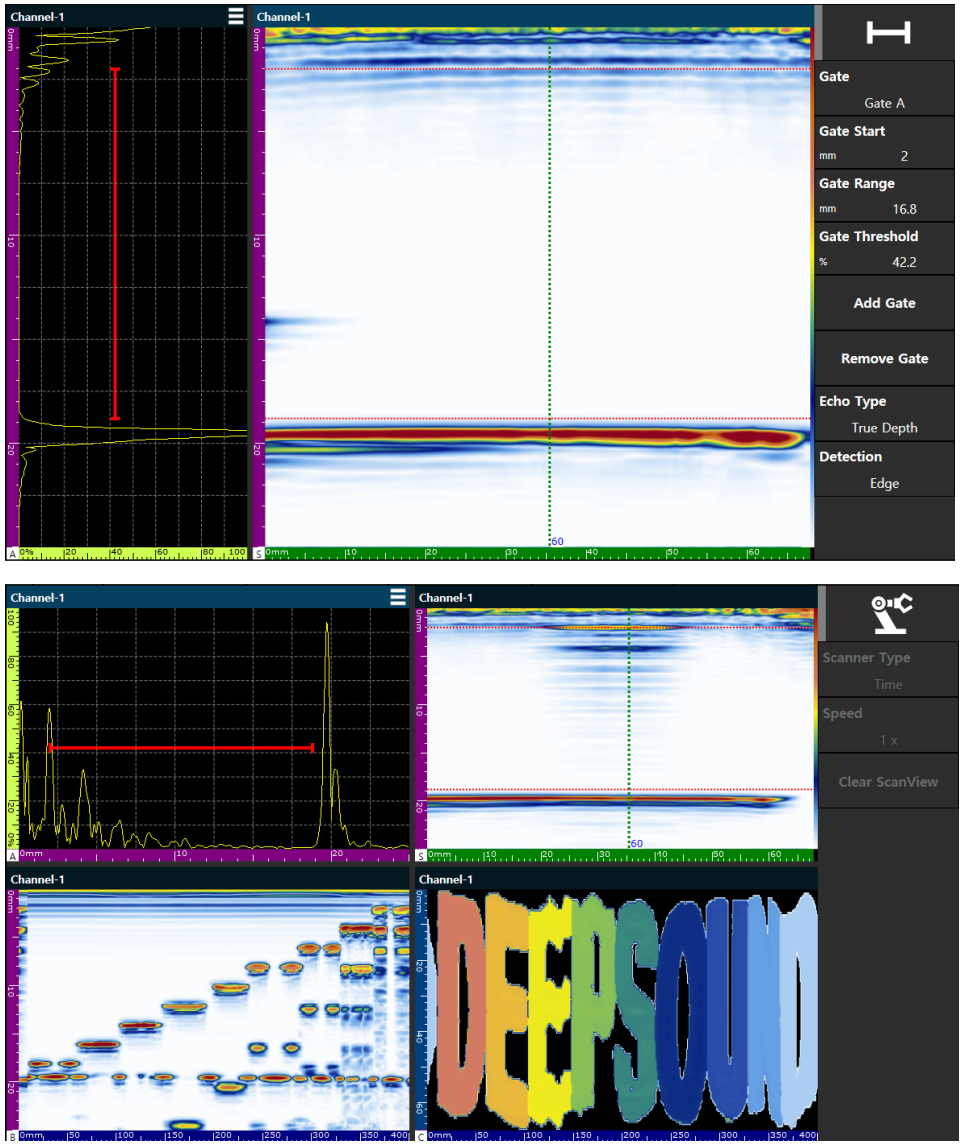
SEONGSAN
(주) 성산연구소

2

Corrosion

Feature Menu

Feature Menu – Corrosion



Corrosion Mapping is a function that can measure and check the thickness difference with color.

The difference in thickness is measured with a gate, and the user can set the desired measurement standard.

For the measurement standard, select Peak / Edge using Detection in the Gate list.

Peak is measured based on the highest value of Amplitude.

Edge is measured based on the part where the gate and the signal meet.

The peak has a color map of Rainbow, and the edge has a Corrosion Color.

After setting the gate range to be measured, move the scanner to collect data.

SEONGSAN
(주) 성산연구소

3

PA Dual

Feature Menu

Feature Menu – PA Dual

Probe Type	
PA Linear	
Tx Start	**Tx Stop**
1	32
Rx Start	**Rx Stop**
1	32

Probe Type	
PA Dual	
Tx Start	**Tx Stop**
1	32
Rx Start	**Rx Stop**
33	64

PA Dual is an inspection method in which the Tx Element / Rx Element is separately set and used, and is similar to the concept of Pitch & Catch.

PA Dual can be used by selecting from probe types.

Probe type has two options, PA Dual and PA Linear.

For PA Dual, Tx Element / Rx Element must be set separately.

PA Linear does not differentiate between Tx / Rx and setting.

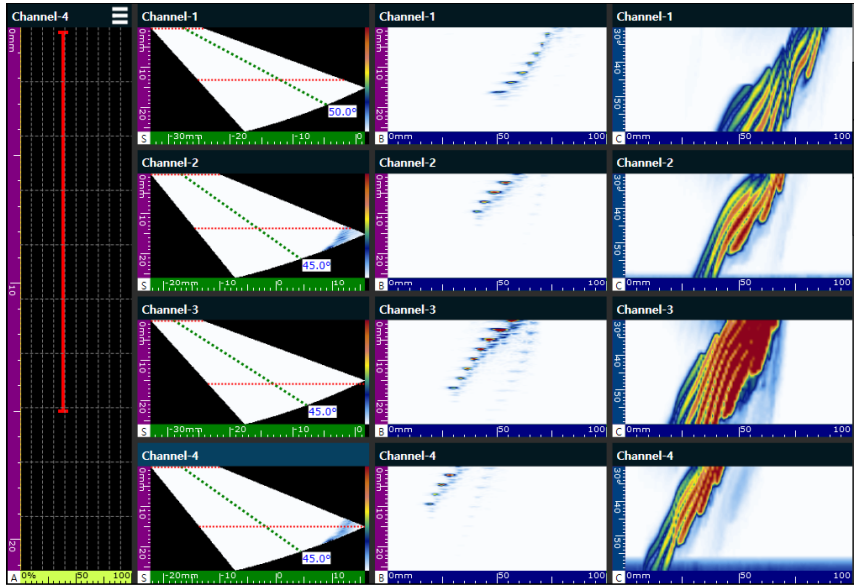
SEONGSAN
(주) 성산연구소

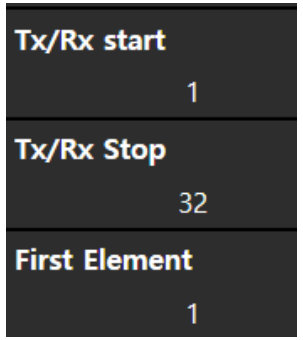
4

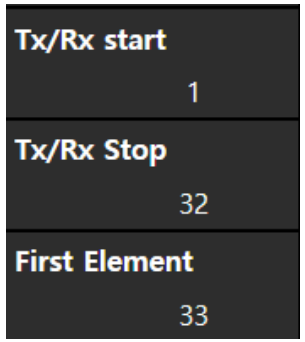
Multi Ch

Feature Menu

Feature Menu – Multi Ch







Multi Ch (Multi Group) can be composed of various probes by adding channels.

Configure Multi Ch using Channel Add and Copy.

Layout is automatically added and converted when adding and copying.

In order to compose a Multi, the element position value starting with the First Element must be entered.

- For example, to configure 4 PA channels, First Element 1 / 33 / 65 / 97 must be written, and Tx / Rx can be set to 32CH to 1/32.

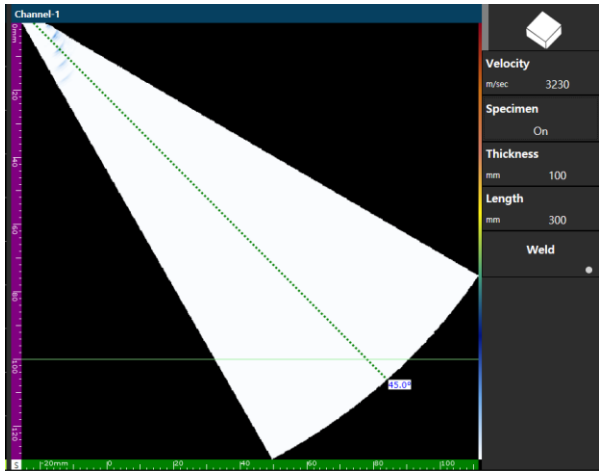
SEONGSAN
(주) 성산연구소

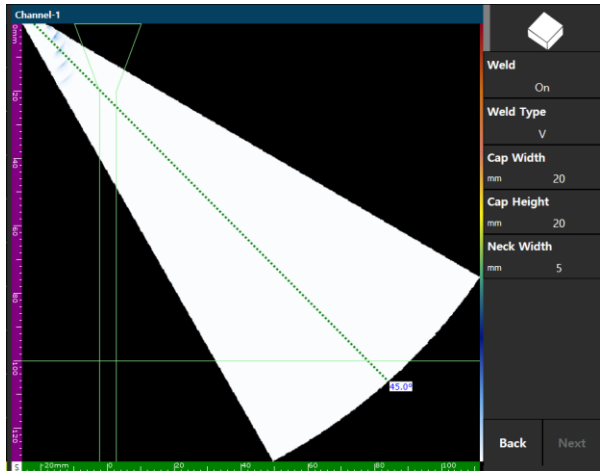
5

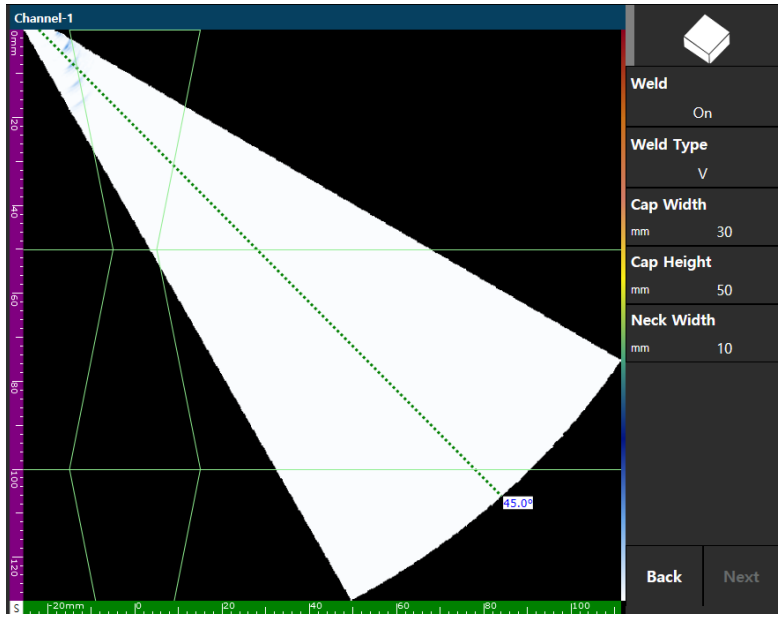
Specimen & Weld

Feature Menu

Feature Menu – Specimen & Weld







Specimen & Weld are marked on the screen by setting as follows.

Specimen – Thickness is displayed through On / Off.

Display position change according to Thickness value.(Ex. Check the mark on Thickness 100mm)After clicking Weld, select the Weld type

With V welding selected, enter values for Cap Width / Height / Neck Width.

Mark the desired welding shape and finish.