OKOndt GROUP™

Ultrasonic Flaw Detector

SONOCON B

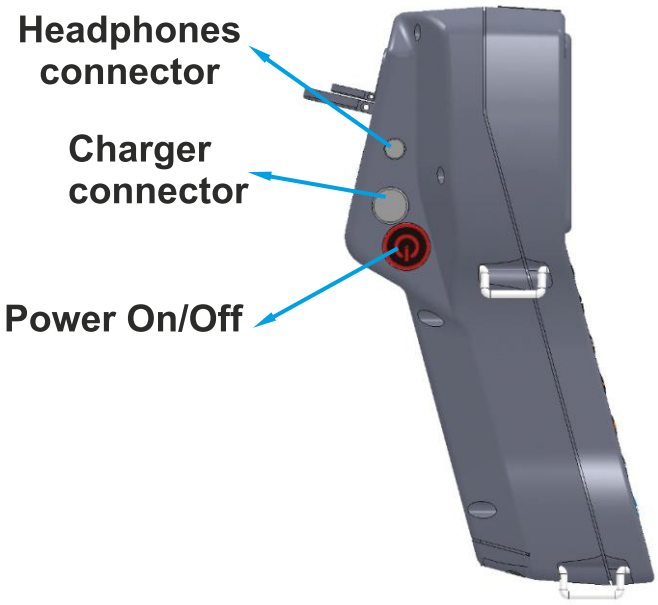
Quick start guide

Common features C
UT version features B
Thickness Gauge + version features T

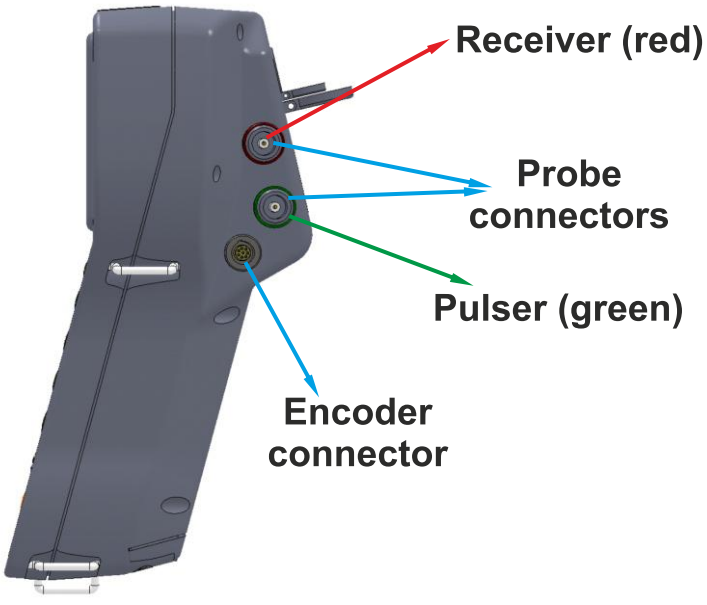
www.okondt.com

Rear Panel of the Flaw Detector

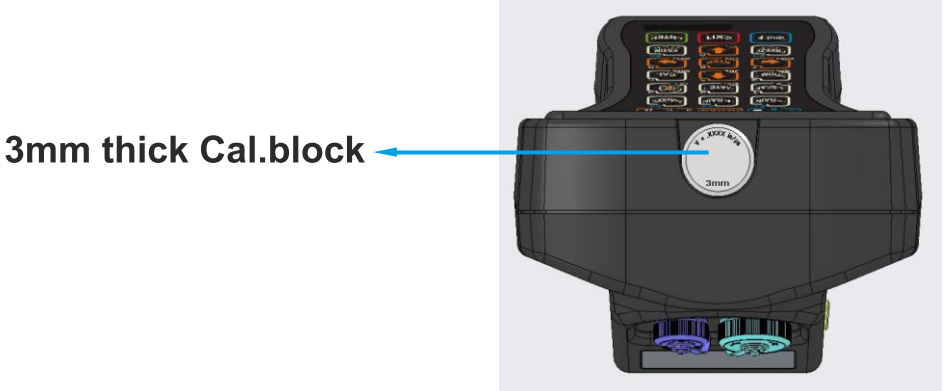
Left Side Panel of the Flaw Detector



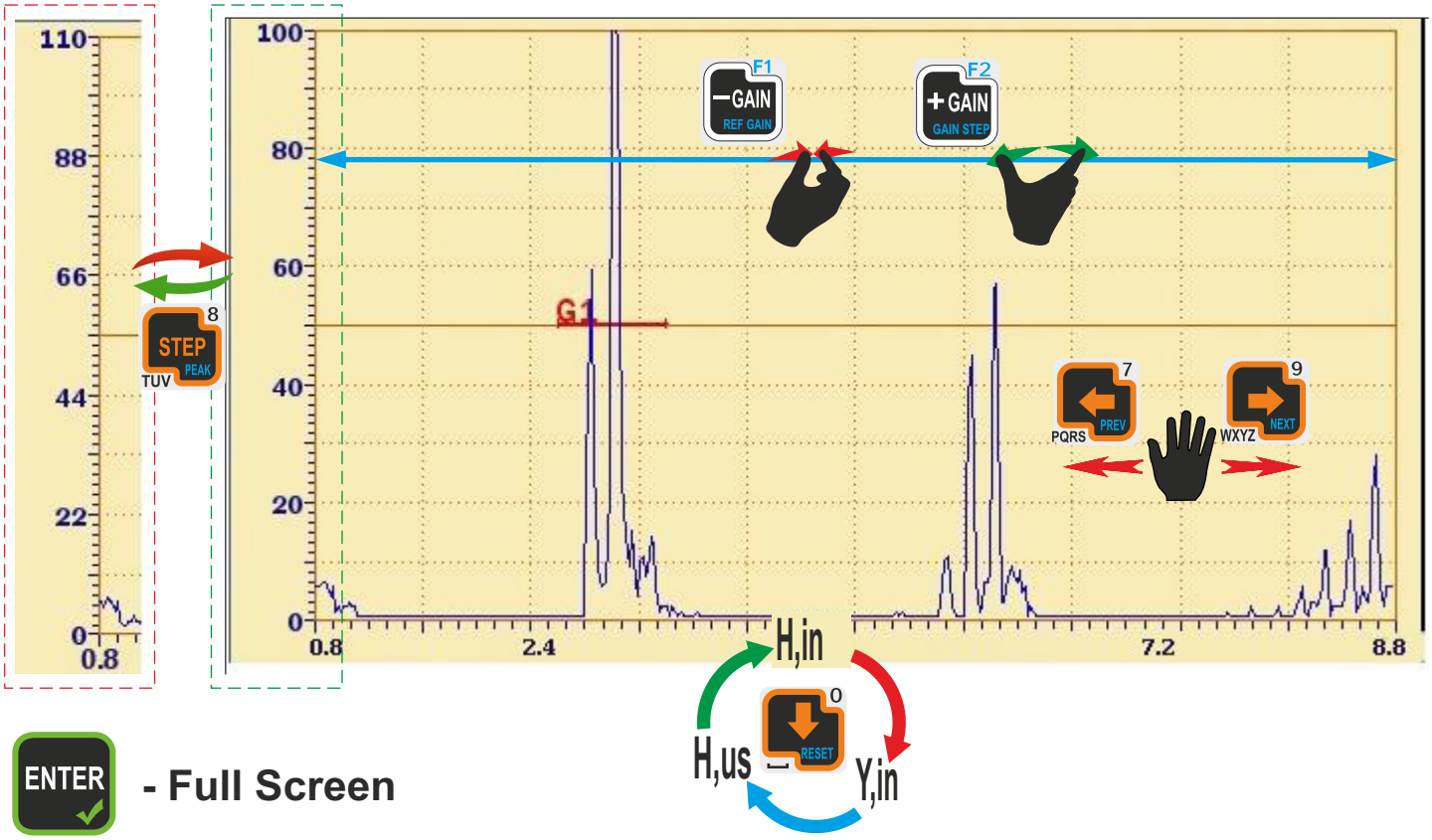
Right Side Panel of the Flaw Detector



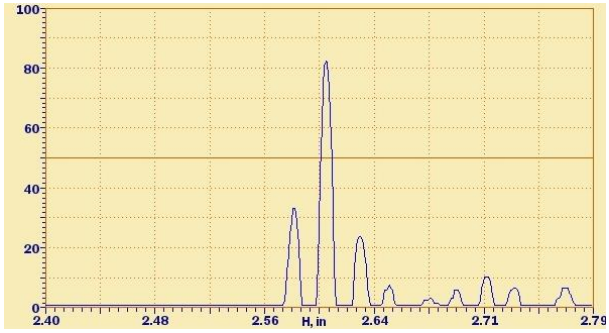
Top Panel of the Flaw Detector



A-SCAN MANIPULATION©

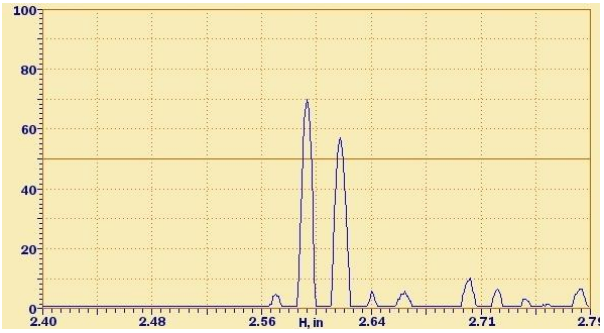


RECTIFICATION CHOICE©

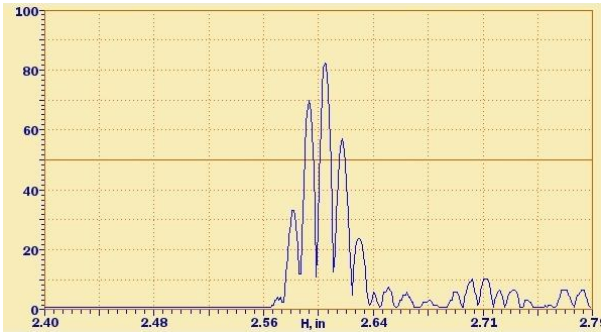


Negative halfwave

Radio Frequency



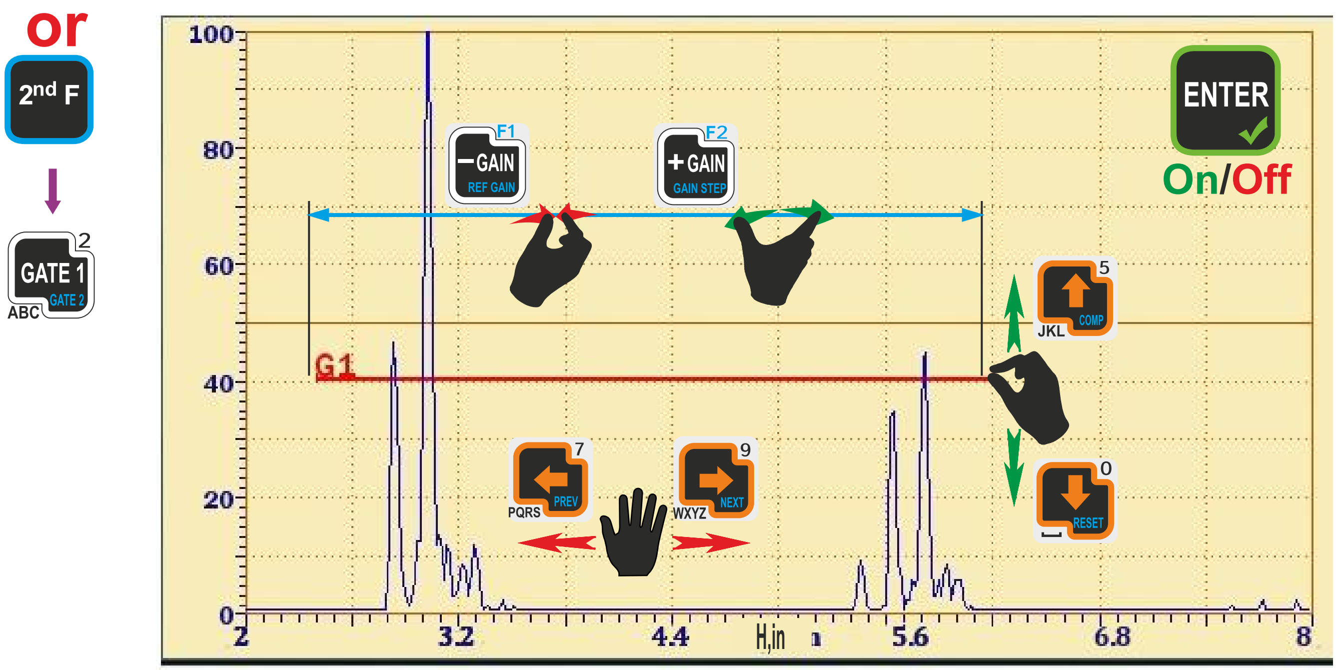
Positive halfwave



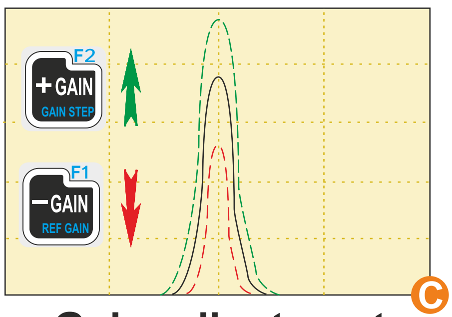
Full wave

2nd F → A-SCAN RECTIF

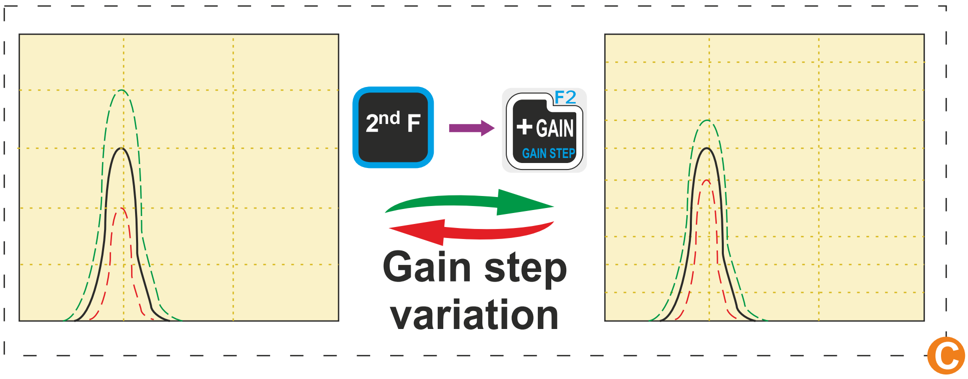
GATES MANIPULATION



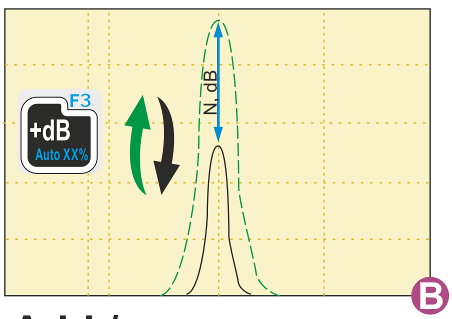
GAIN MANIPULATION



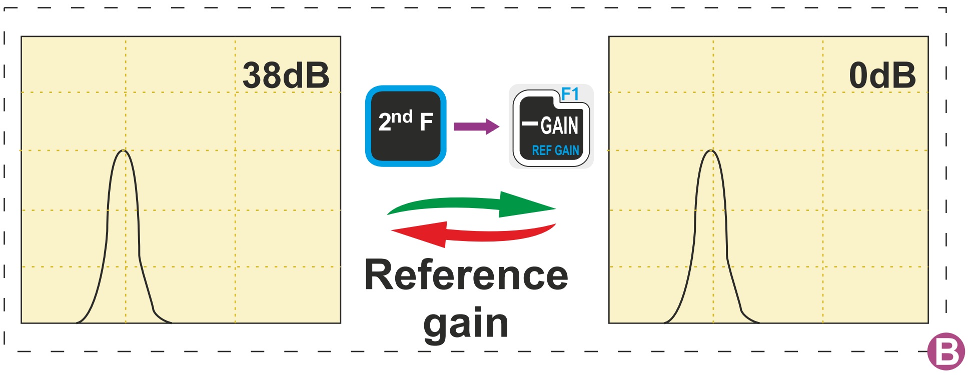
Gain adjustment



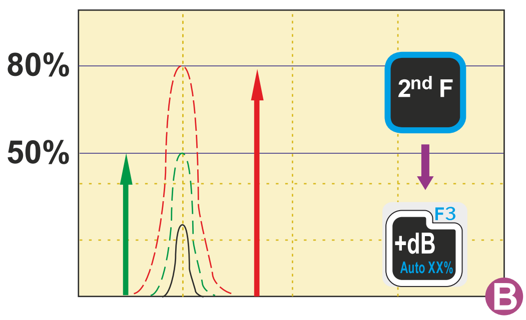
Gain step variation



Add / remove some number of dB

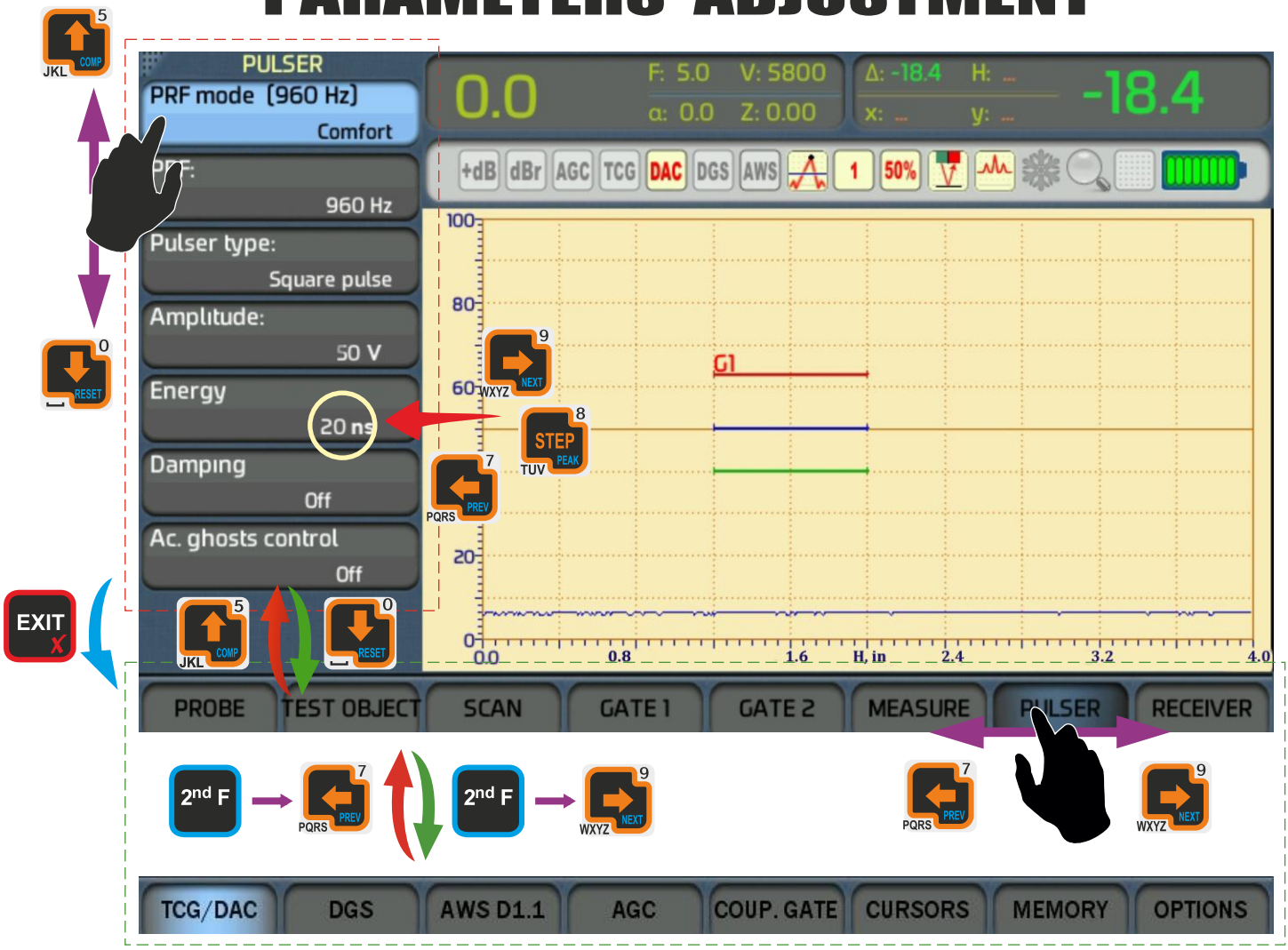


Reference gain

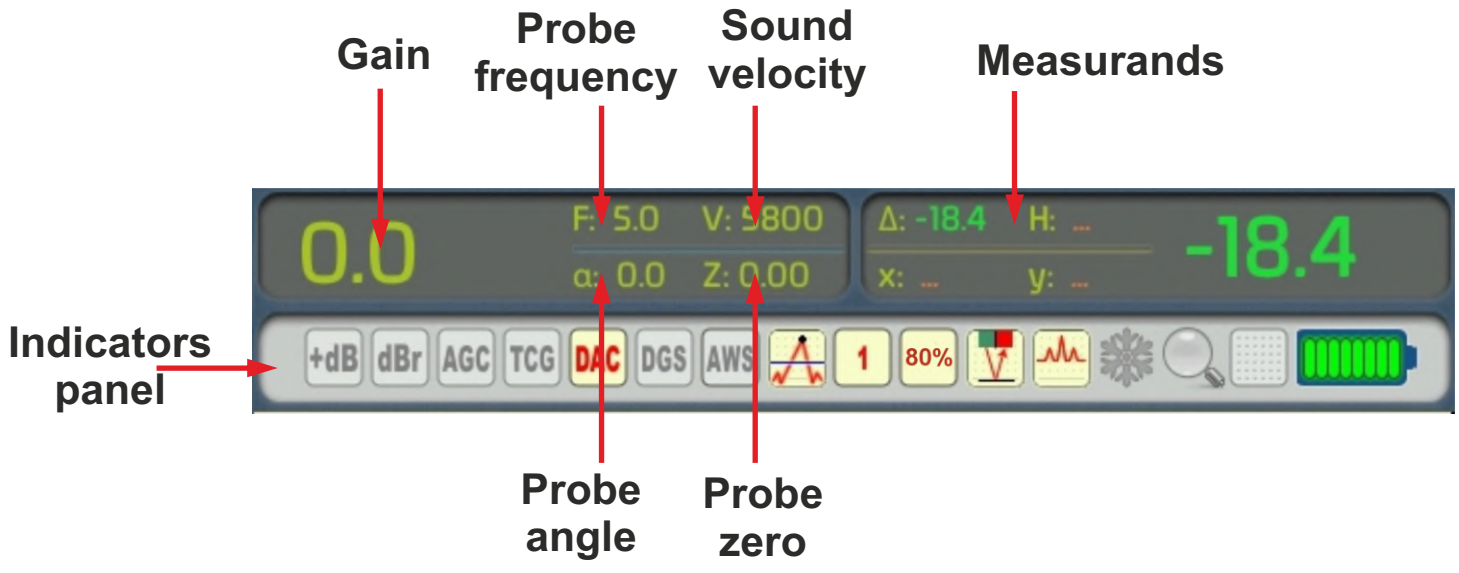


Put signal to the reference level (80% or 50%)

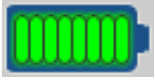
MENU NAVIGATION AND PARAMETERS ADJUSTMENT©



INDICATION PANEL®

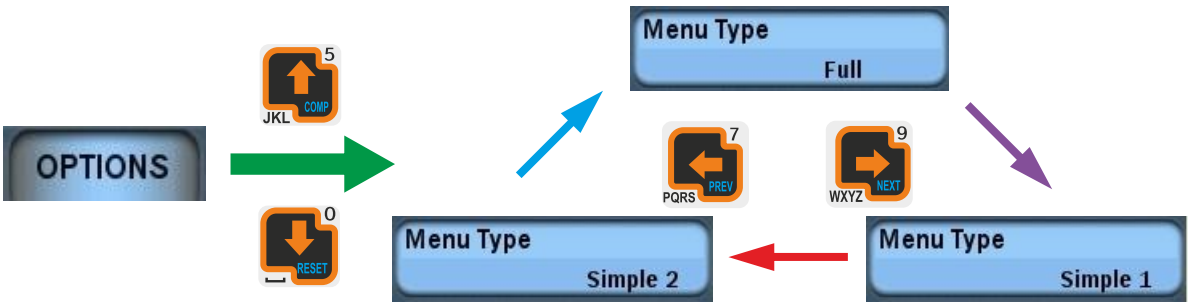


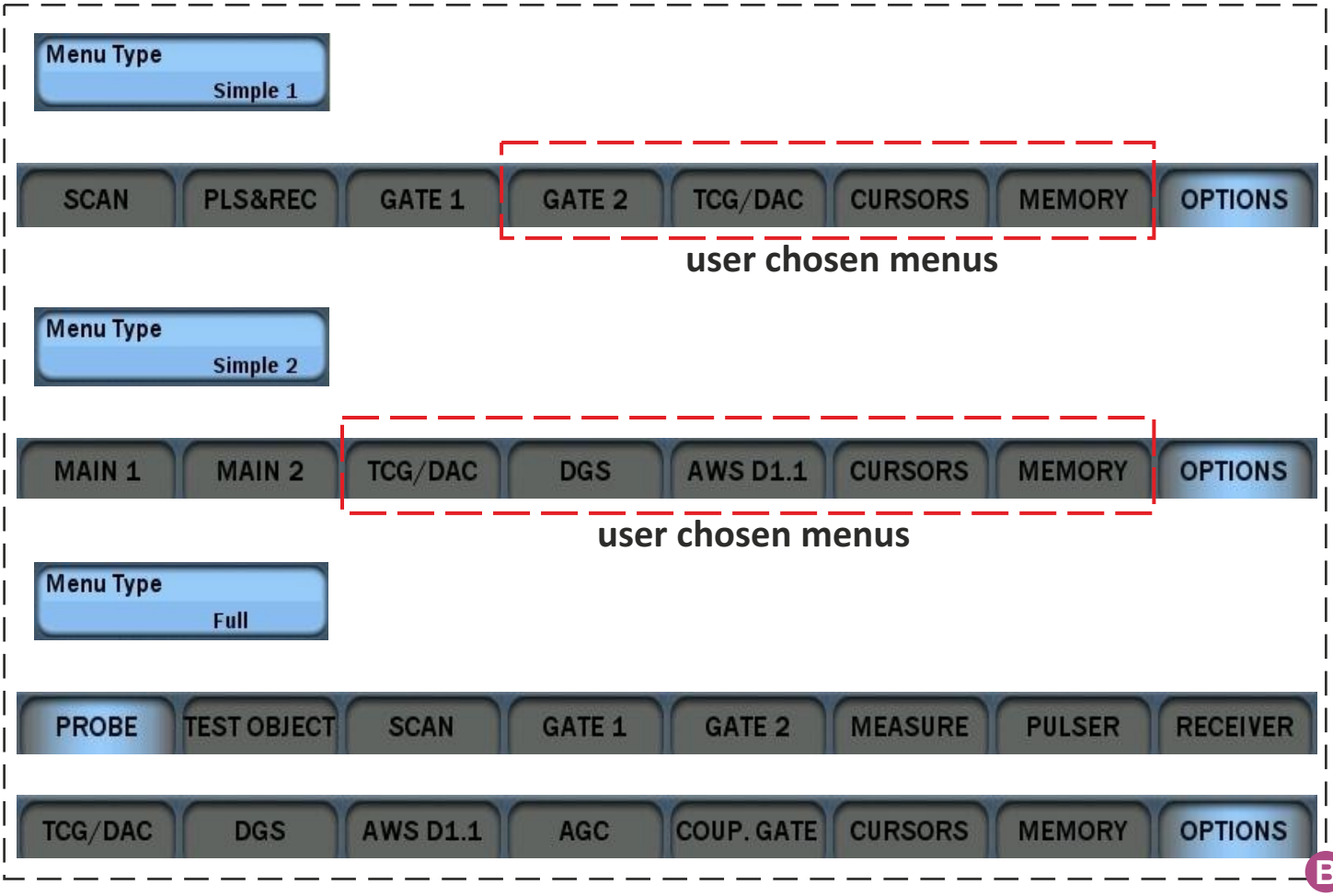
INDICATORS®

N dB addition to the current gain:	+dB / +dB	- Not added / Added
Reference gain mode:	dBr / dBr	- Off / On
AGC:	AGC / AGC	- Inactive / Active
TCG:	TCG / TCG	- Inactive / Active
DAC system:	DAC / DAC	- Inactive / Active
DGS system:	DGS / DGS	- Inactive / Active
AWS rating:	AWS / AWS	- Inactive / Active
Measurement threshold:	 / 	- Edge / Peak
Measurement mode:	1 / 1-2 / 2-C1 / …	- 1, 2 – gates 1 and 2; C1, C2 – cursors 1 and 2.
Reference level:	50% / 80%	- Reference level for amplitude measurement in % of vertical scale
Probe type:	 / 	- Single element / Dual element
Rectification mode:	 /  /  / 	- Radio Frequency / Full wave / Positive half waves / Negative half waves
Signal freeze modes:	 /  /  / 	- Off / Frozen / Frozen + Live signals / Estimate mode
Zoom modes:	 /  / 	- Off / Zooming gate 1 / Zooming gate 2
Direct manipulation modes:	/ ASC / G1 / G2	- Off / A-Scan manipulation / Gate 1 manipulation / Gate 2 manipulation
Battery indicator:	 … 	- Full / … / Almost empty

MENU STRUCTURE

In UT-Basic software version there are 3 sets of main menu - up to your choice:

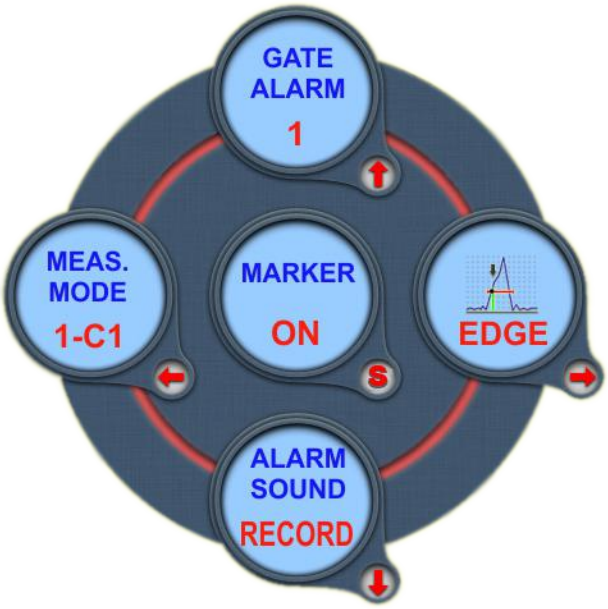




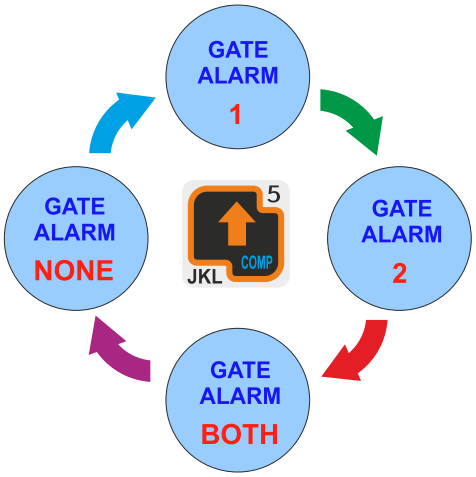
In Thickness Gauge+ software version there is only one menu type:

QUICK ACCESS TO MAIN PARAMETERS®

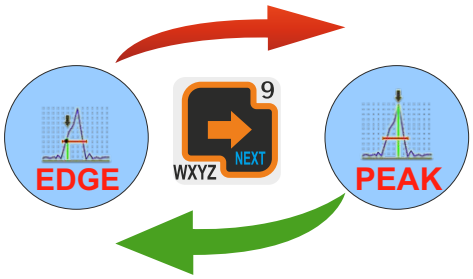
UT-B 1. Measurement and alarm



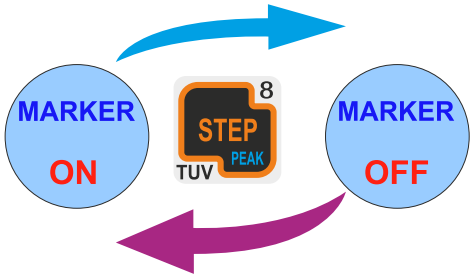
«Gates choice for Flaw Alarm System»



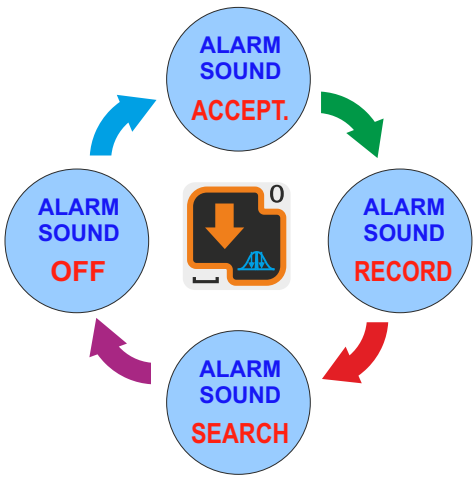
«Time/distance measurement threshold choice»



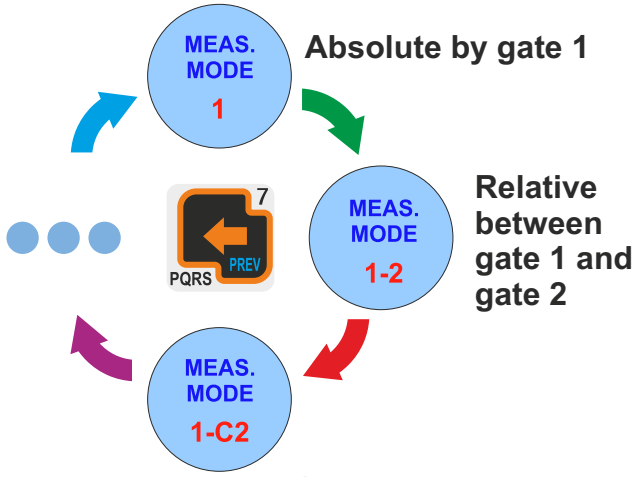
«Measurement point marker»



«Choice of the gate(s) level for the sound alarm»

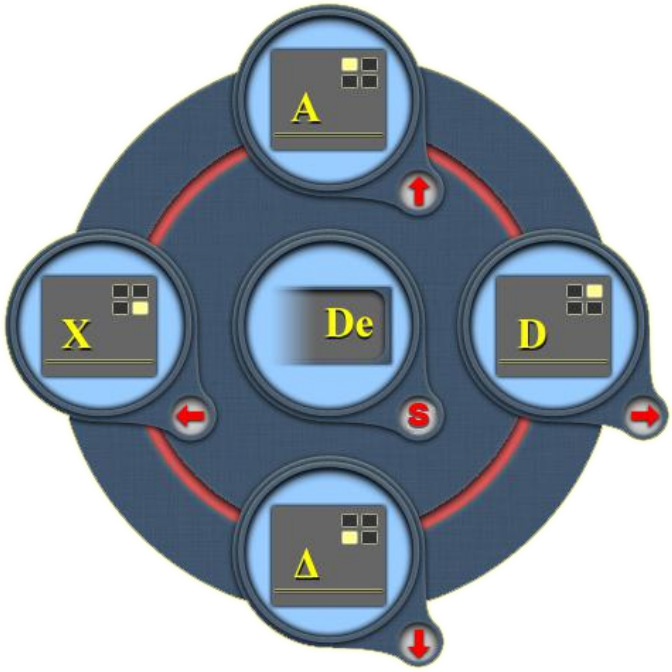


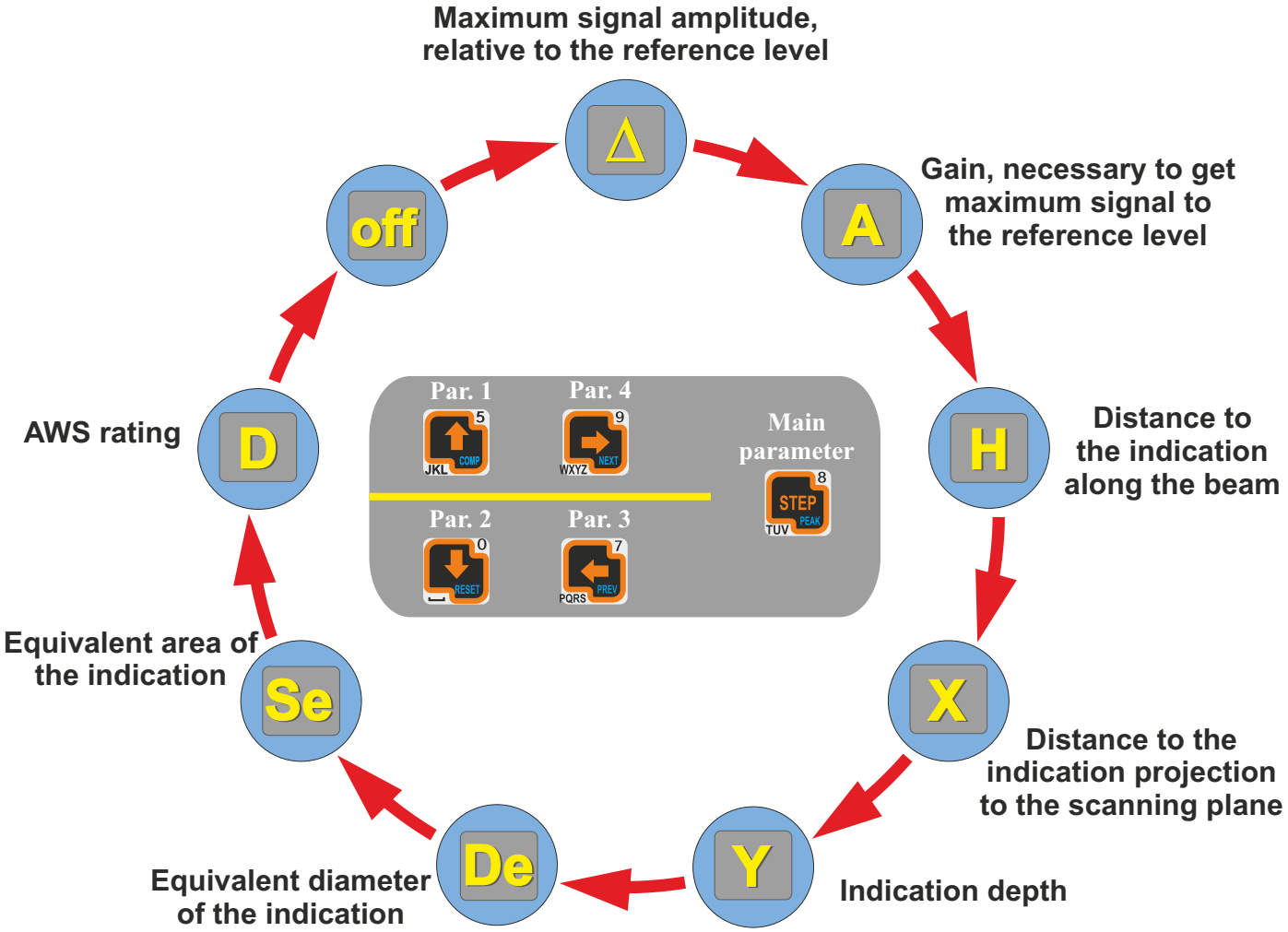
«Choice of gate(s) and cursor(s) for absolute or relative measurements»



QUICK ACCESS TO MAIN PARAMETERS®

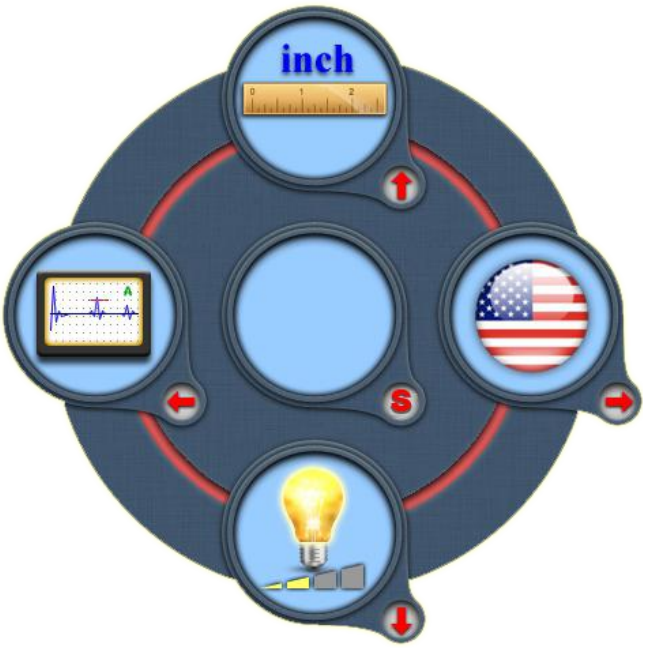
UT-B 2. Measurands choice



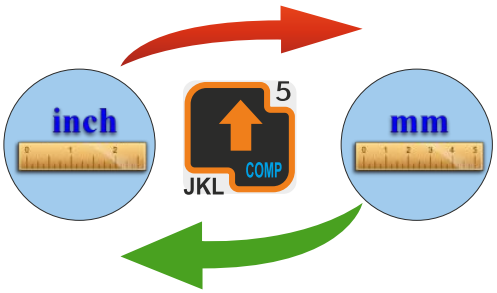


QUICK ACCESS TO MAIN PARAMETERS®

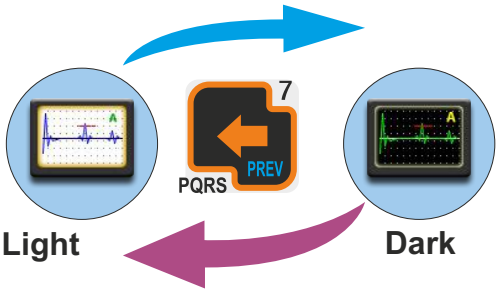
UT-B 3. Display options



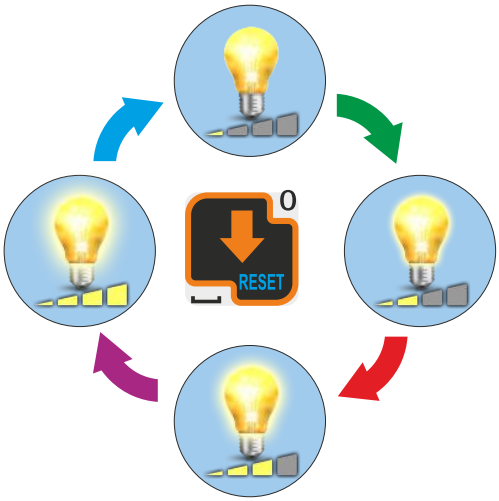
«Switching measurement units»



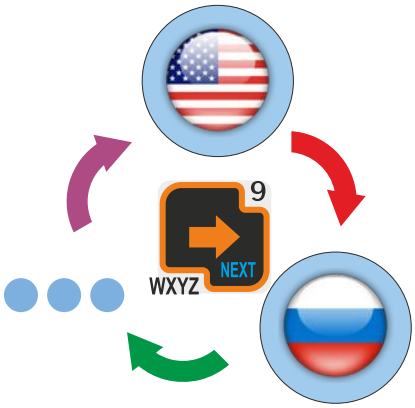
«Switching color schemes»



«Display brightness adjustment»



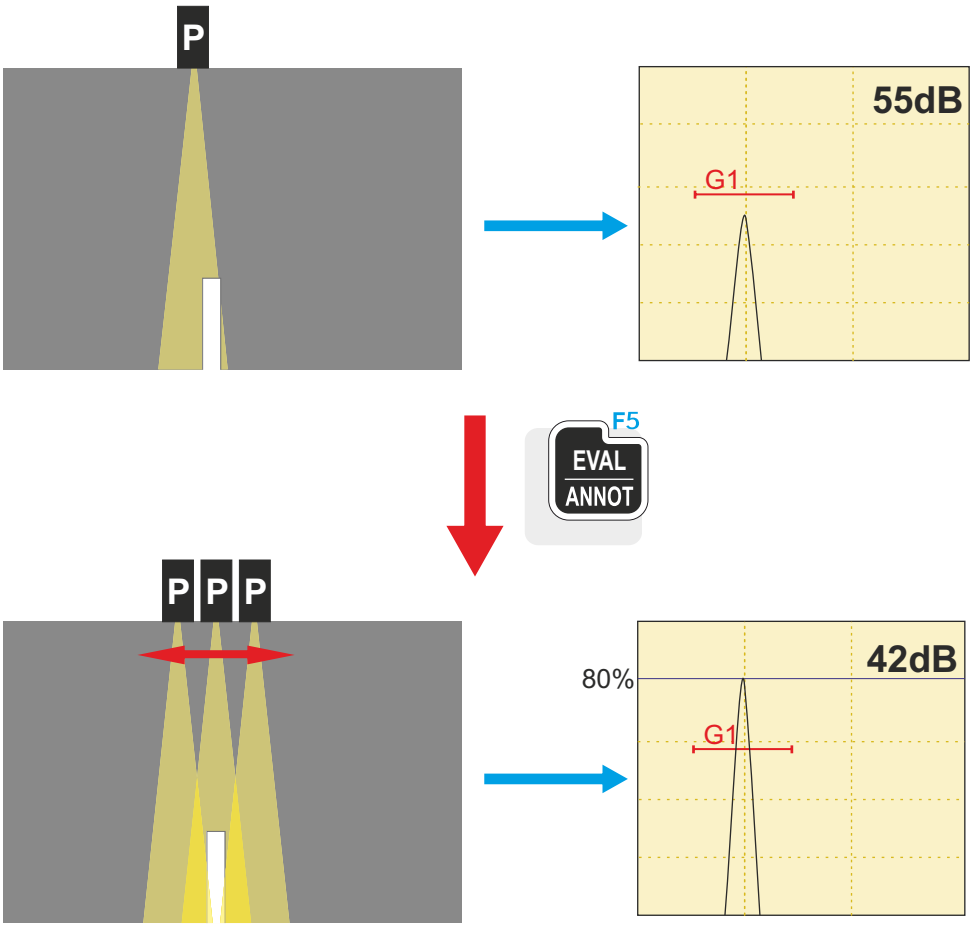
«Interface language choice»



INDICATION SEARCH, EVALUATION AND DOCUMENTATION AIDS B

Evaluate mode

Helps finding the “best” signal. Just turn it on and scan.



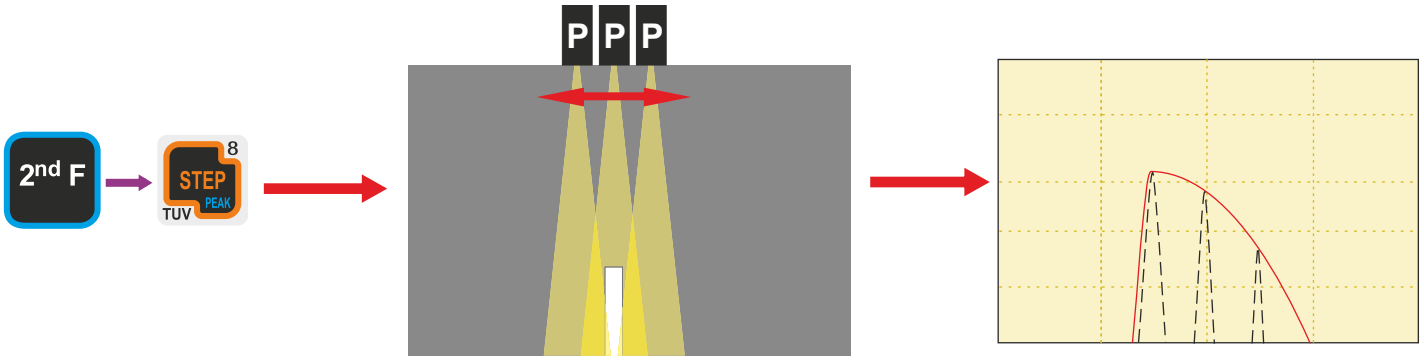
Review all readings and save the indication if necessary

- switches evaluate mode off and retrives the original gain

INDICATION SEARCH, EVALUATION AND DOCUMENTATION AIDS B

Peak hold mode

Saves the peak values of all signals along the A-Scan.

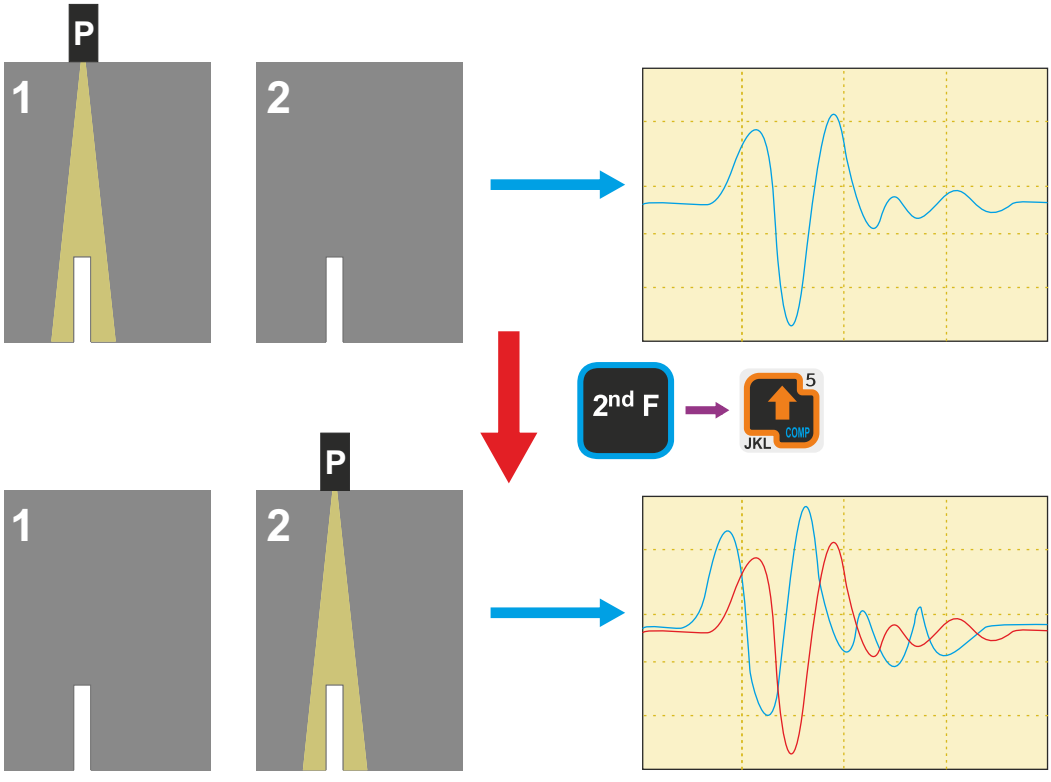


2nd F → STEP 8 TUV PEAK - **Peak curve reset**

2nd F → 0 RESET - **Peak hold mode off**

Signals compare mode

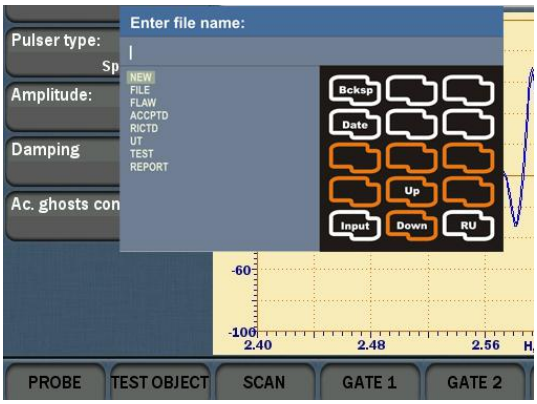
Displays both “frozen” and current signals.



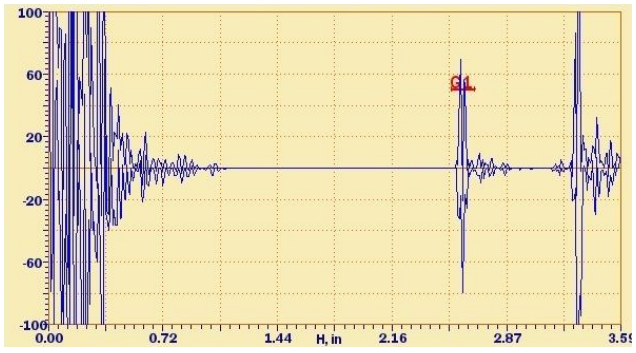
2nd F → 5 JKL COMP - **Signals compare mode off**

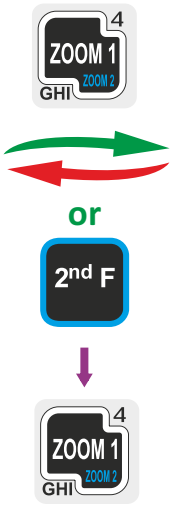
INDICATION SEARCH, EVALUATION AND DOCUMENTATION AIDS

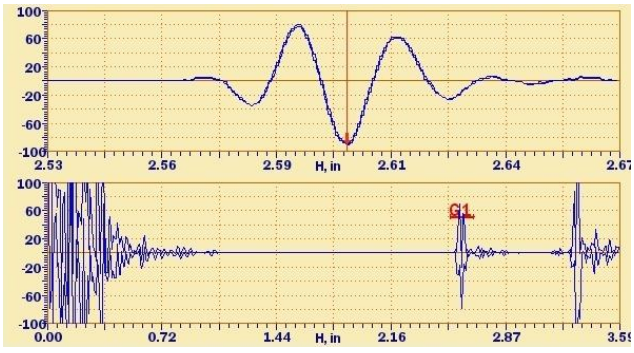
Memory shortcuts. Results saving



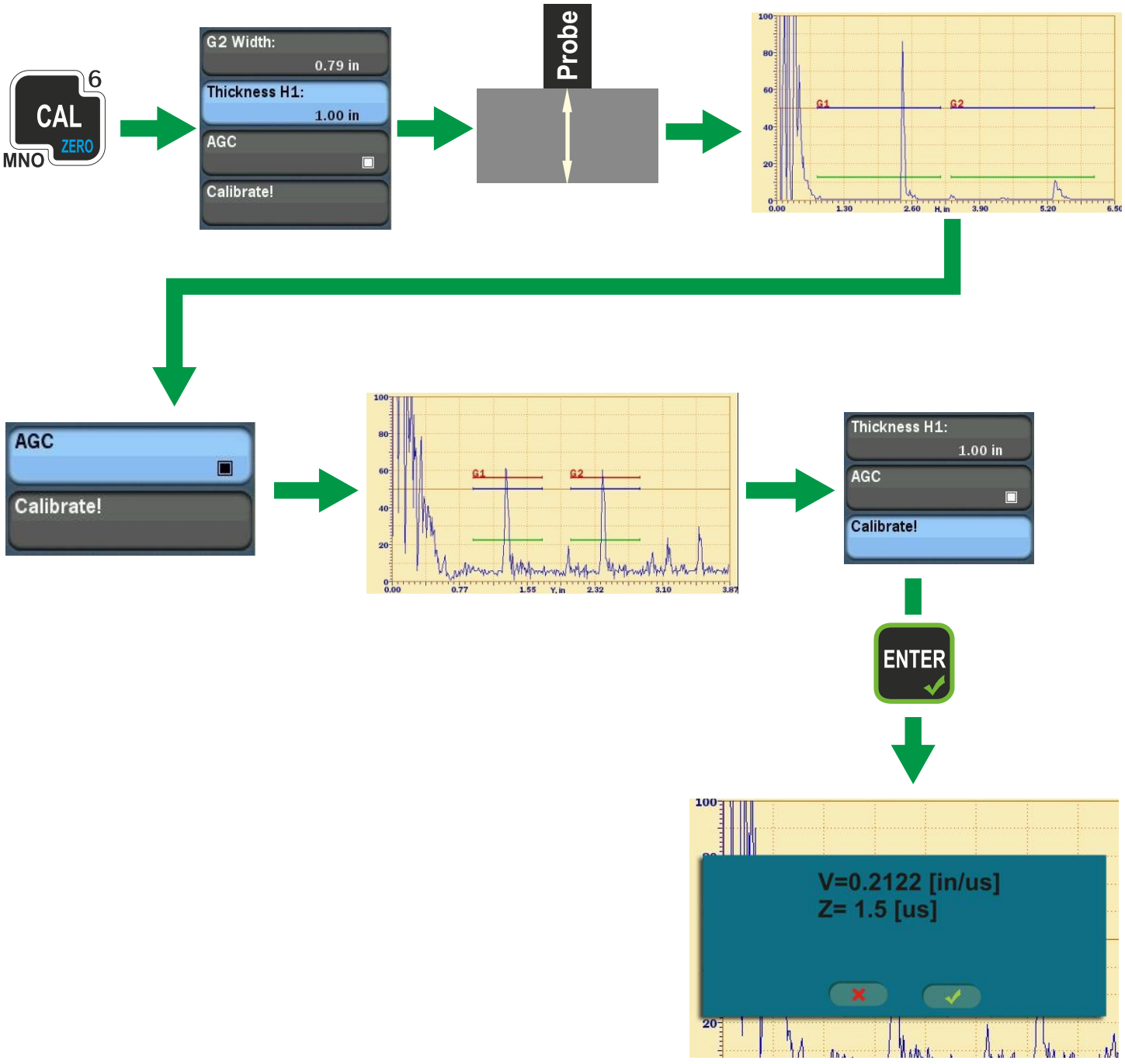
Smart zoom mode





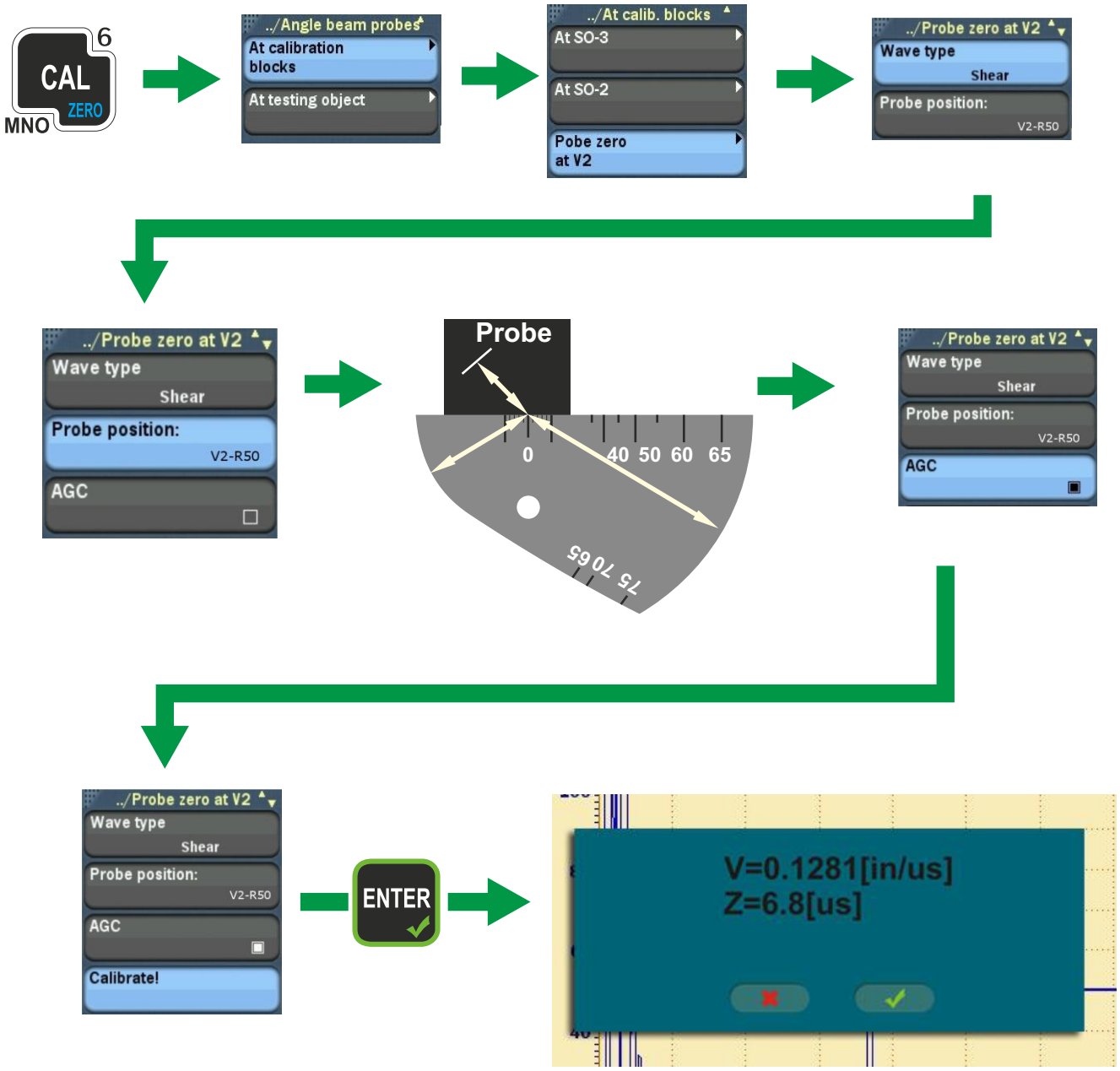


STRAIGHT-BEAM PROBES CALIBRATION Ⓑ



ANGLE-BEAM PROBES CALIBRATION®

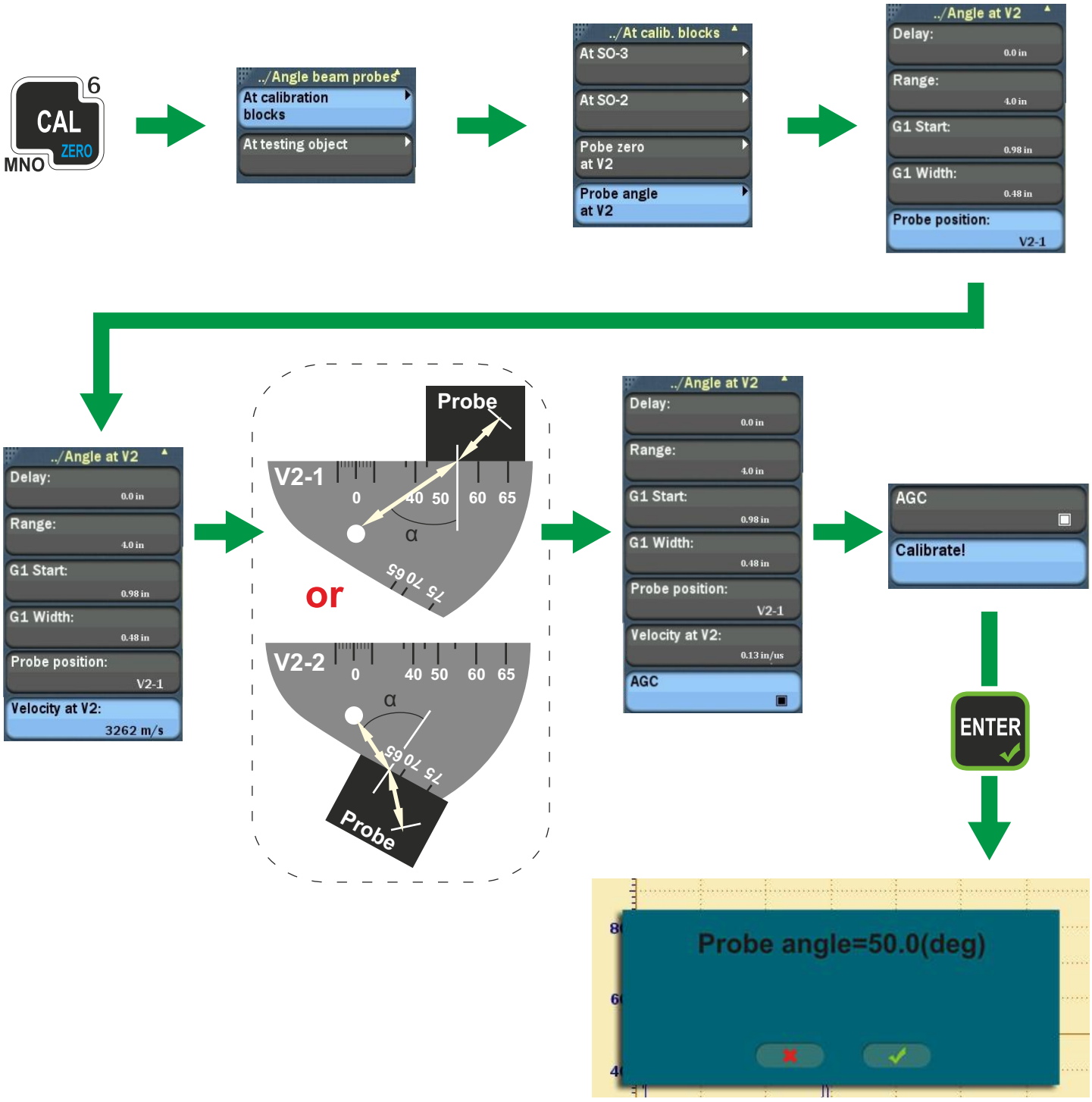
Calibration of the sound velocity and probe zero at V2 calibration block



ANGLE-BEAM PROBES CALIBRATION®

Probe angle calibration at V2

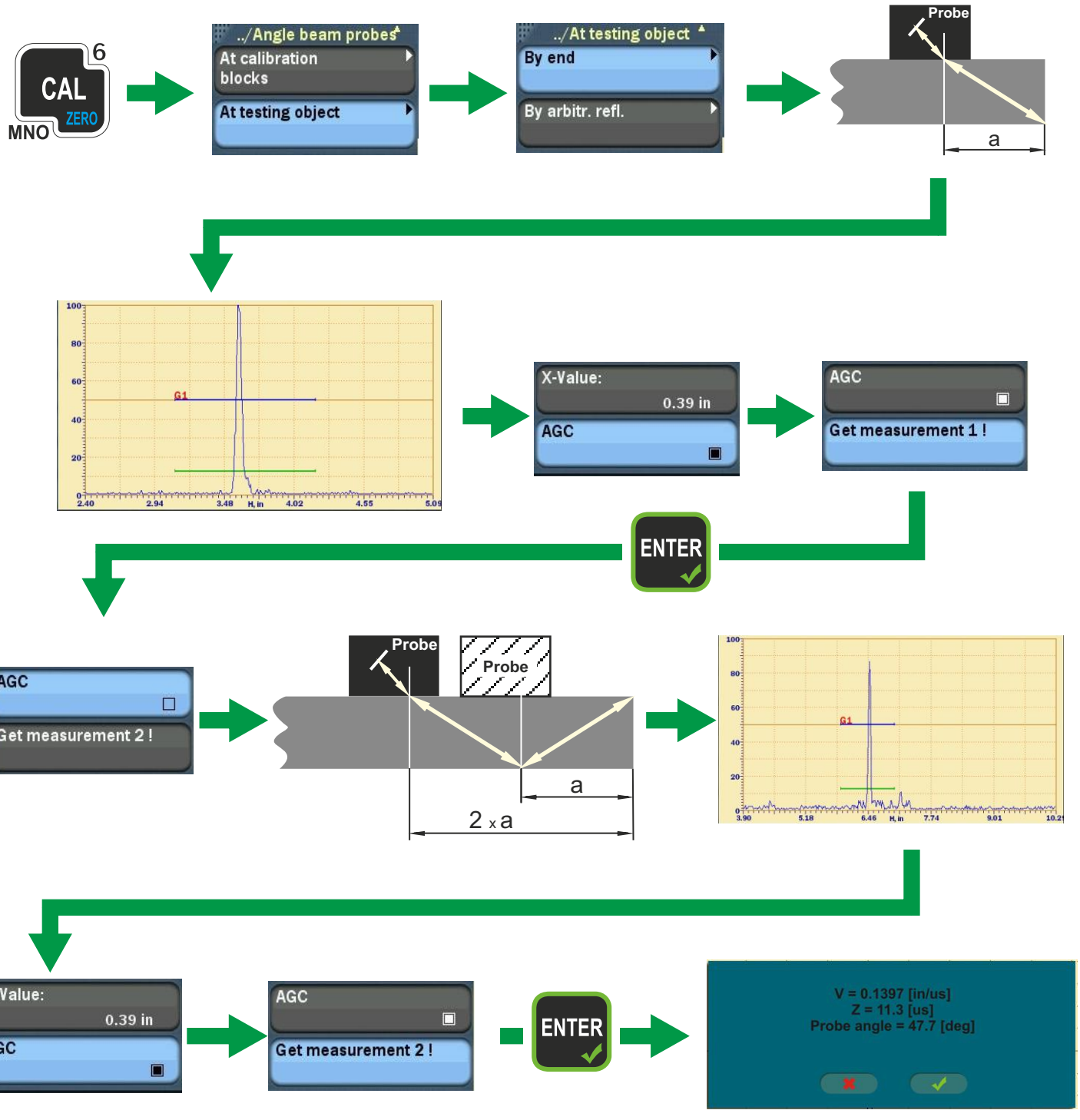
Set up probe zero and sound velocity in V2 before strating this calibration.



ANGLE-BEAM PROBES CALIBRATION®

Calibration of sound velocity and probe zero by block or testing object end

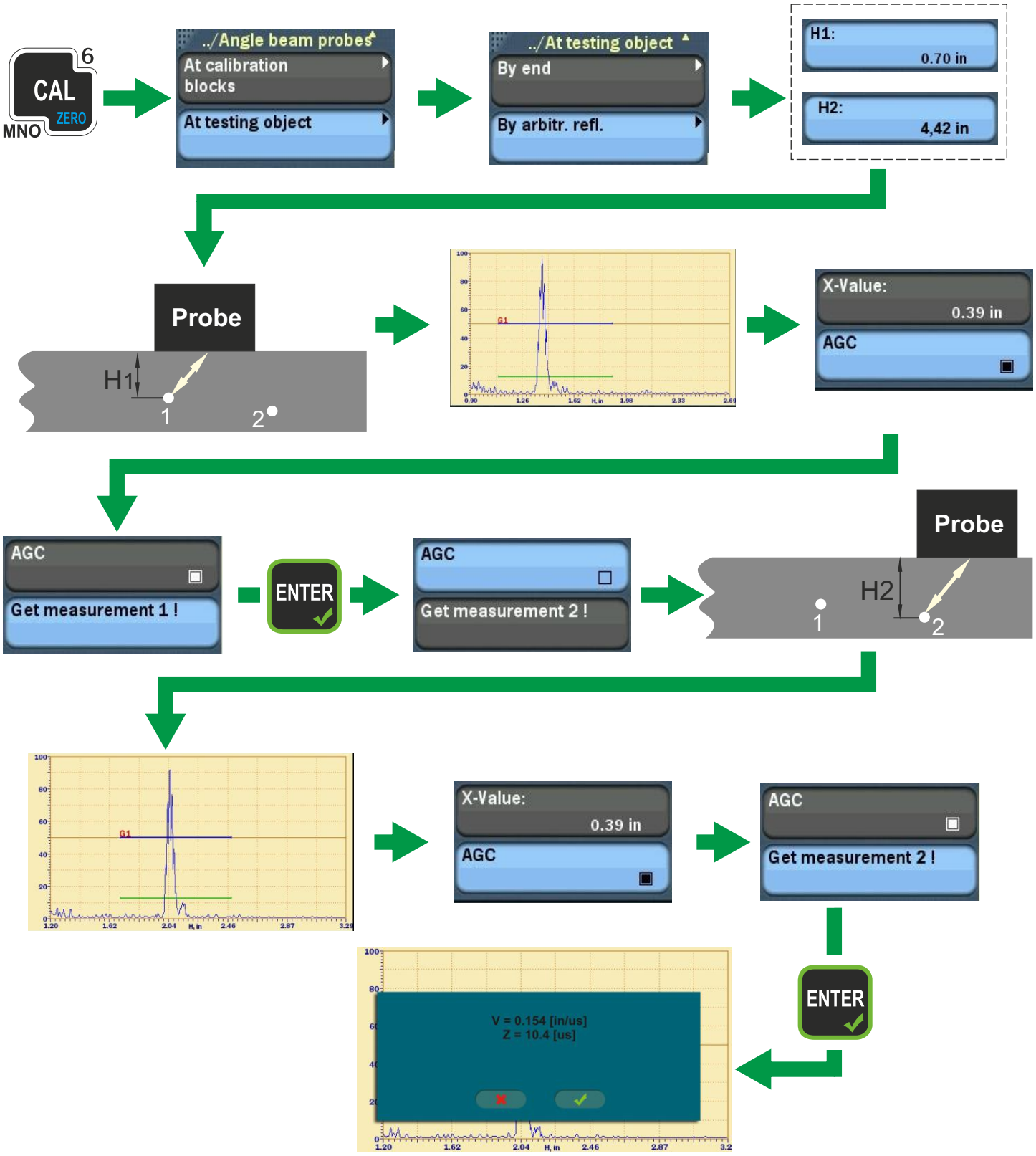
Set up probe angle and X-value before starting this calibration



ANGLE-BEAM PROBES CALIBRATION®

Calibration of sound velocity and probe zero by any reflectors with known location depth

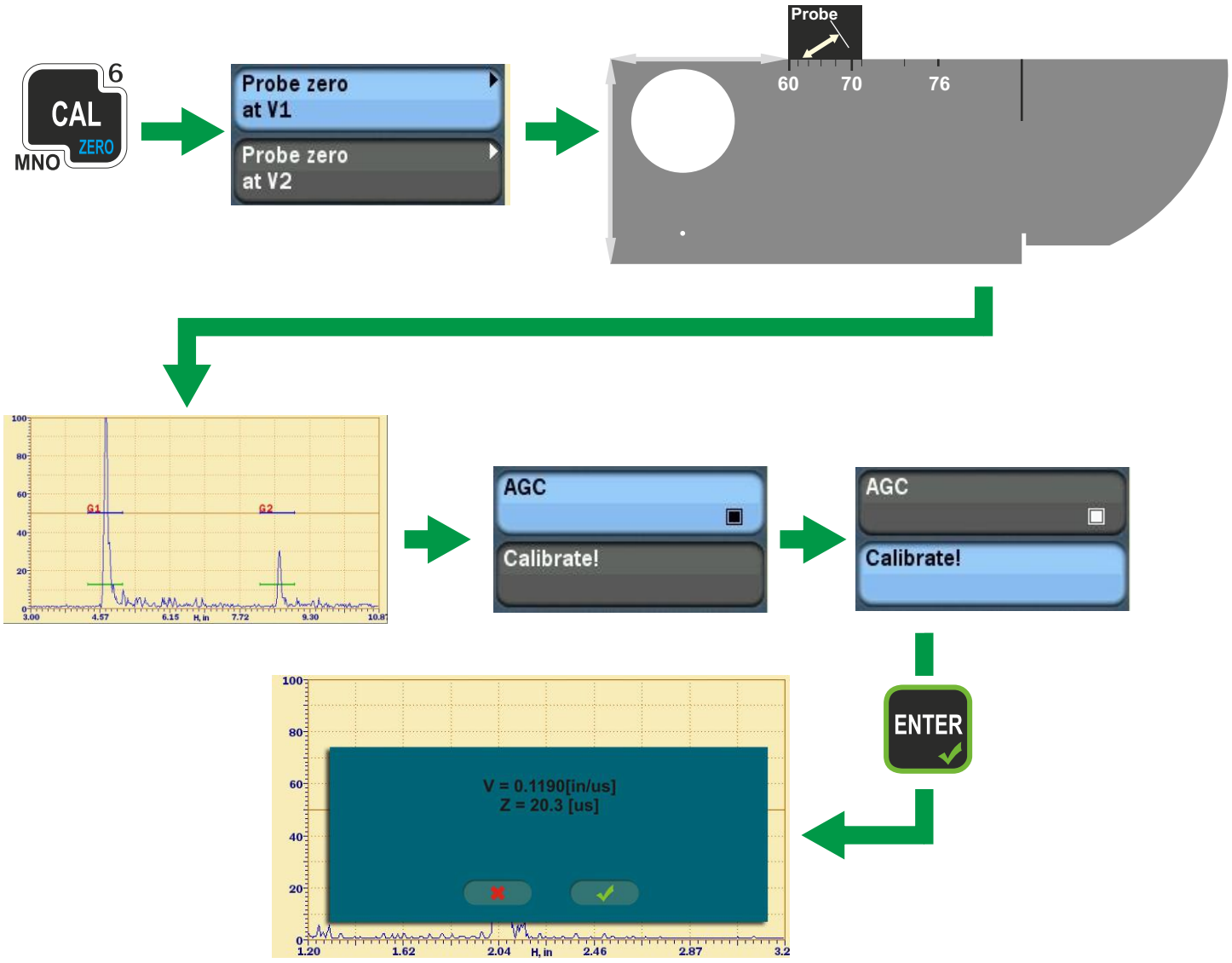
Set up probe angle before starting this calibration



RAYLEIGH WAVE PROBES CALIBRATION®

Calibration of probe zero at V1 block

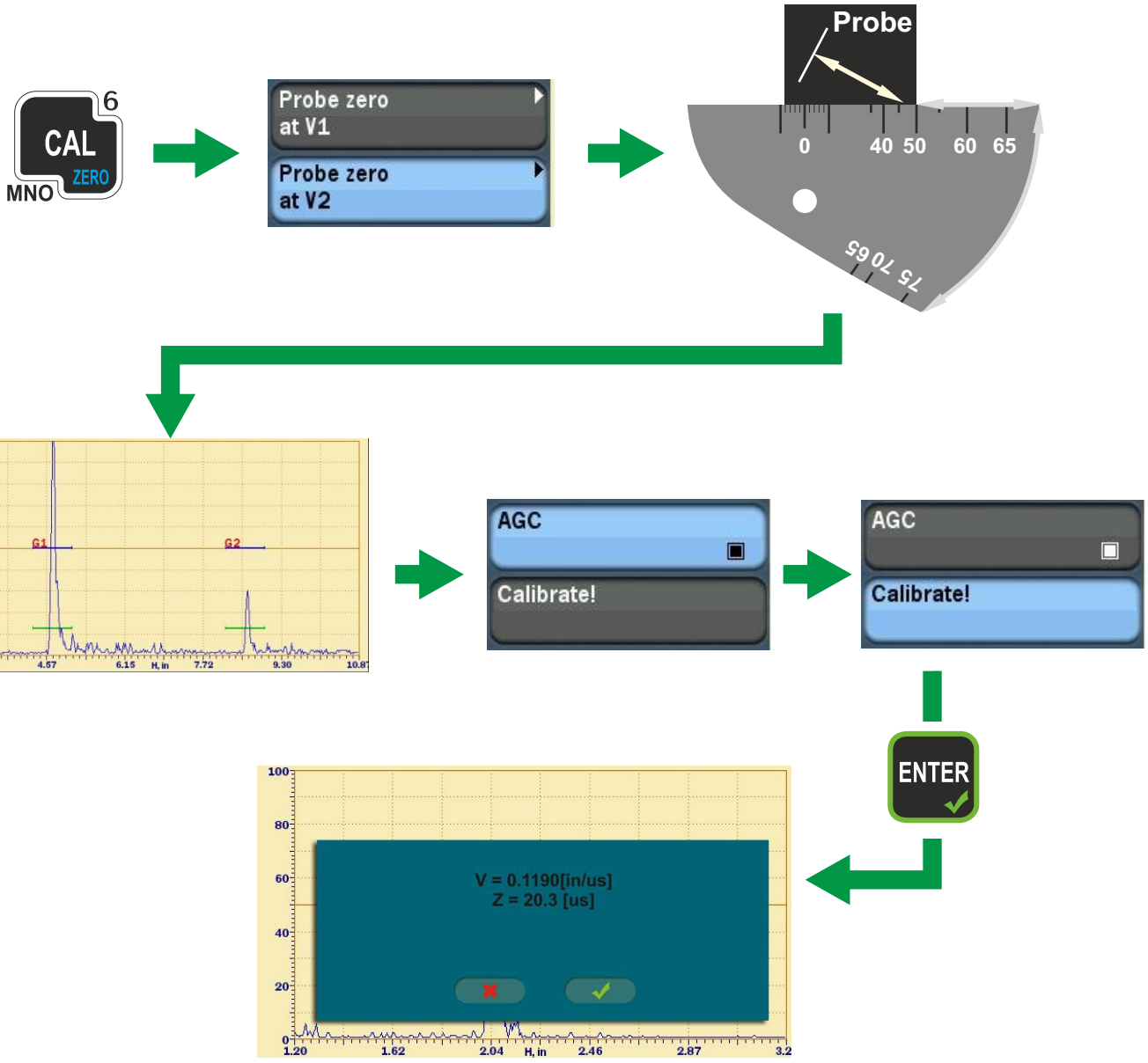
Set up probe angle = 90° before starting this calibration



RAYLEIGH WAVE PROBES CALIBRATION®

Calibration of probe zero at V2 block

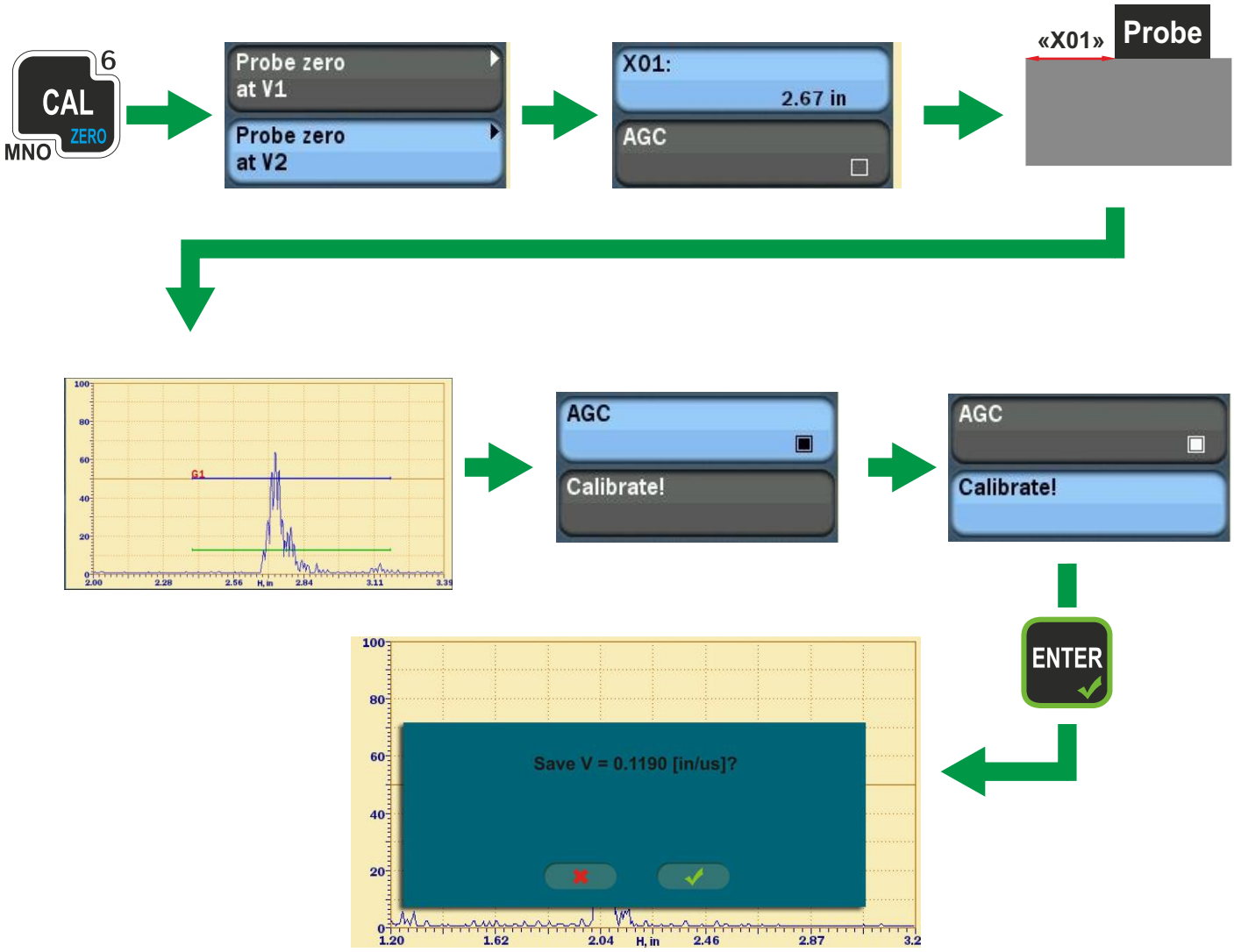
Set up probe angle = 90° before starting this calibration



RAYLEIGH WAVE PROBES CALIBRATION®

Calibration of sound velocity at testing object

Set up probe angle = 90° before starting this calibration



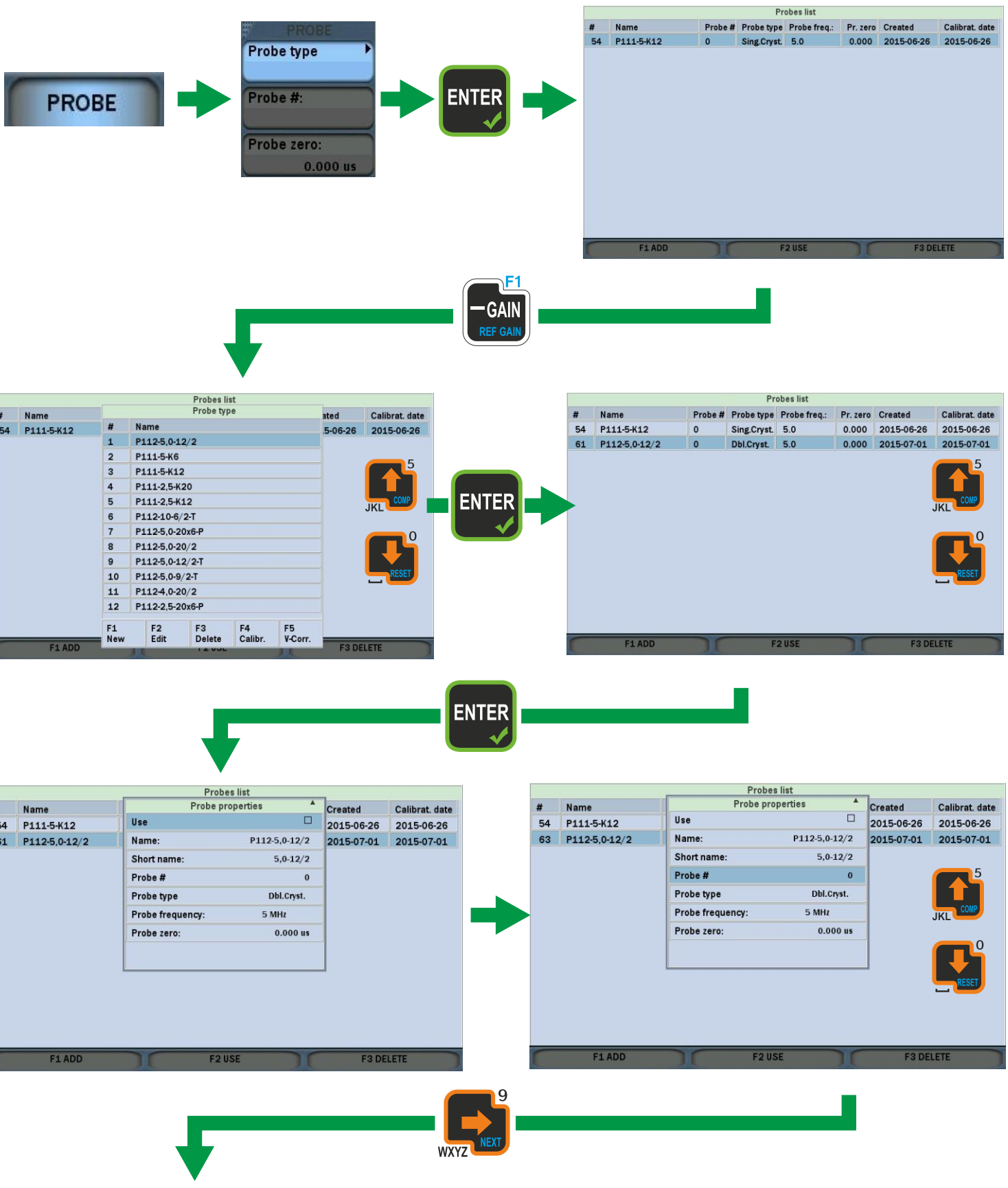
BASIC PREPARATION FOR THICKNESS MEASUREMENT T

1. Connect probe and select it in the probes list – *PROBE* → *Probe type* (add it to the list if necessary);
2. Calibrate probe zero (for details refer to next pages);
3. Set or calibrate sound velocity (for details refer to next pages);
4. Choose measurement type – *MEASURE* → *Meas. type* (*0-1* by default);
5. Choose AGC mode *MEASURE* → *AGC mode* (*Peak* by default);
6. Specify such Maximum Gain Mode (*MEASURE* → *MaxGain mode*) and value of Maximum Gain (*MEASURE* → *MaxGain*) for manual mode, that Maximum Gain is high enough to raise back wall echoes at all thicknesses to be measured at necessary level and low enough that no noises come in the gate when probe is in the air;
7. Adjust scan and gate (for details please refer to the beginning of this guide) so that back wall echoes at all thicknesses to be measured are in the gate limits;
8. Choose PRF mode (*MEASURE* → *PRF mode*)– *High* by default or other in case if acoustic ghost signals are detected.

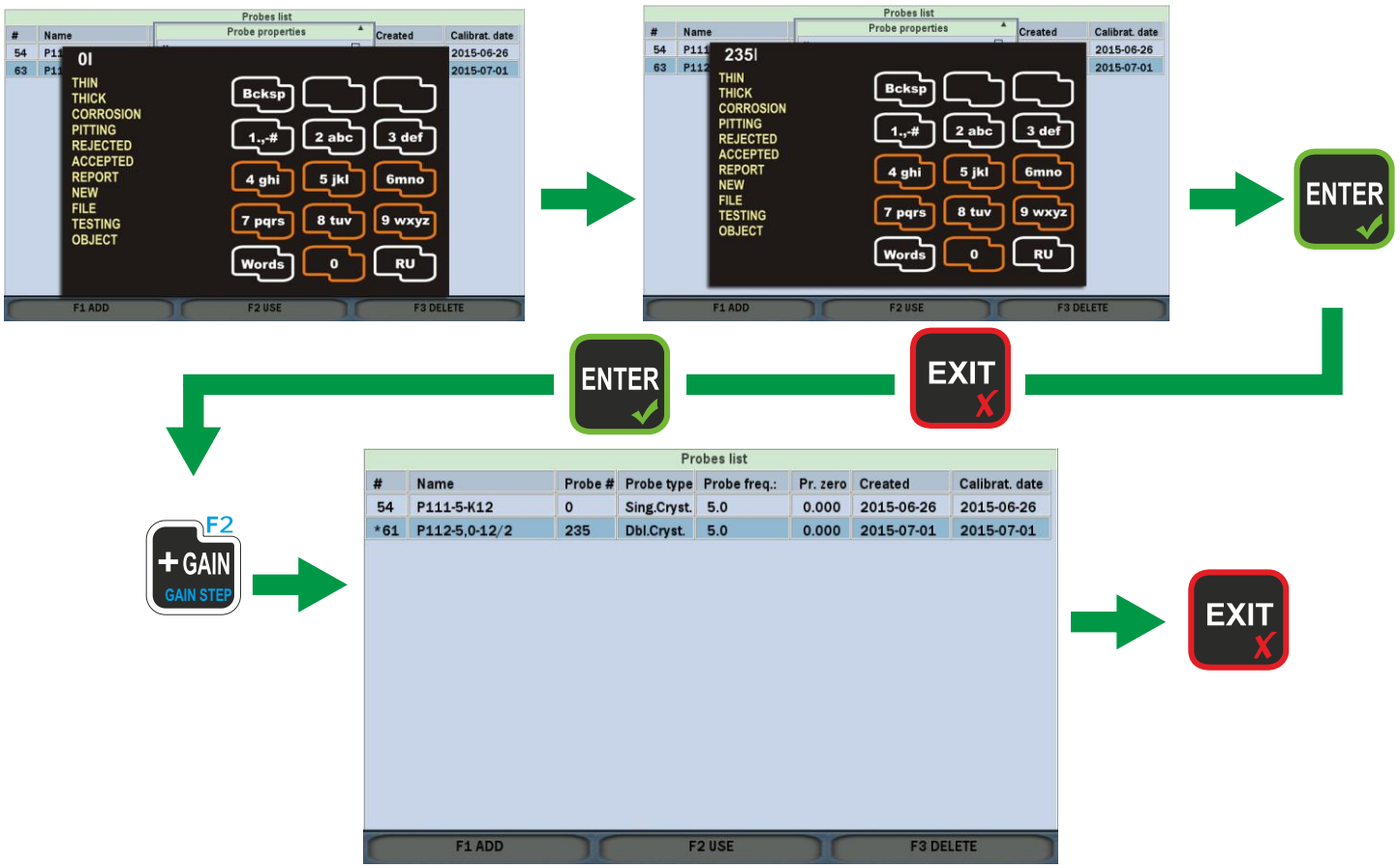
ADDITIONAL PREPARATION FOR THICKNESS MEASUREMENT T

1. Choose measurement threshold (MEASURE →Threshold: Edge / 0-Edge);
2. Choose measurement mode (MEASURE → Mode: Conventional / Min & Max / Differential / % of wear) and specify rated thickness for “Differential” and “% of wear” modes;
3. Specify measurement frequency;
4. Switch on measurement point marker (GTS & ALRM → Marker)(visible in zoom mode);
5. Set alarm bounds (GTS & ALRM →Tmin and Tmax), alarm mode (GTS & ALRM → Alarms), visualization (GTS & ALRM →Show alarm zones) and sound (GTS & ALRM →Sound).

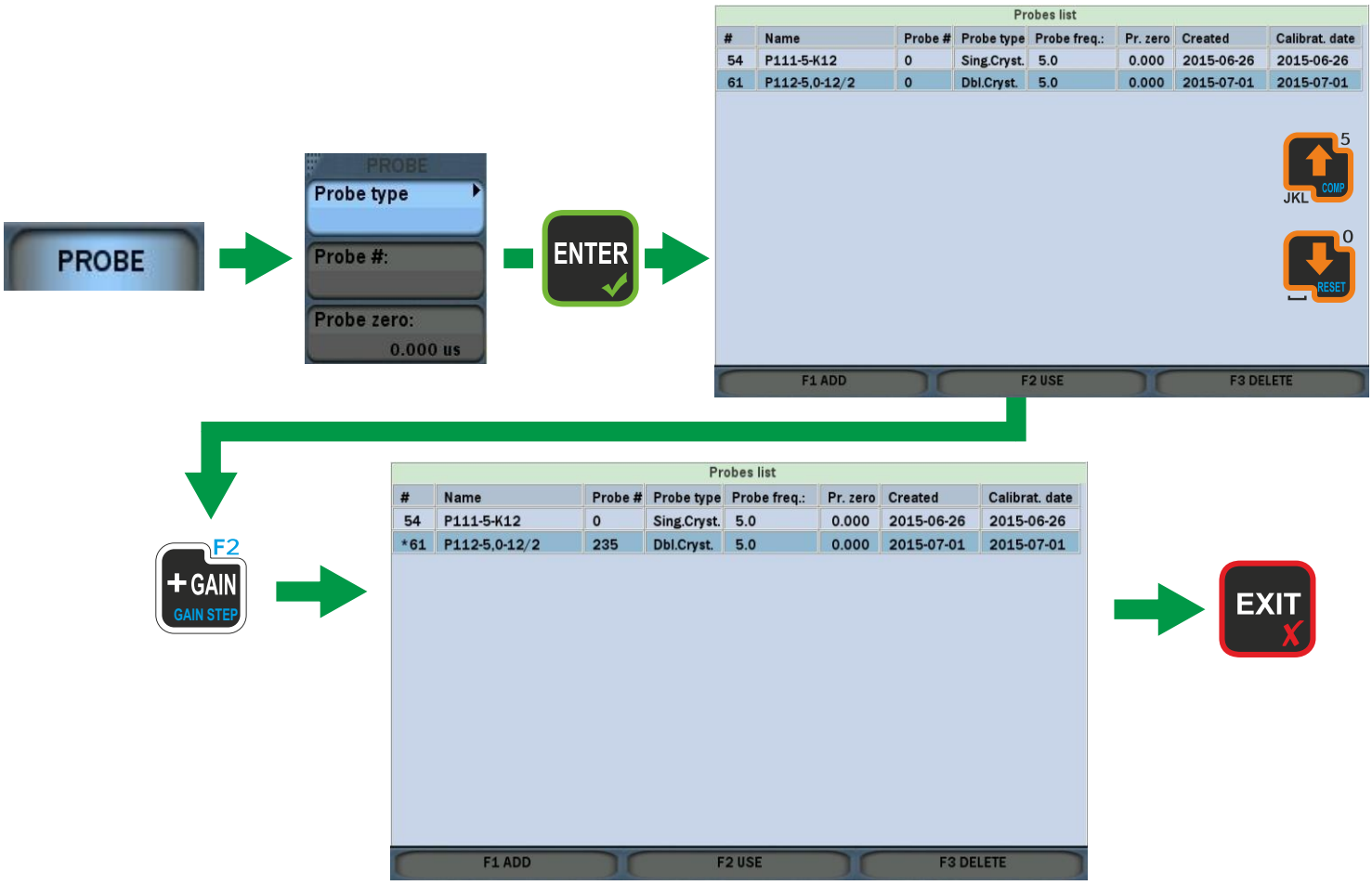
ADDING NEW PROBE TO THE LIST



Continued at the next page



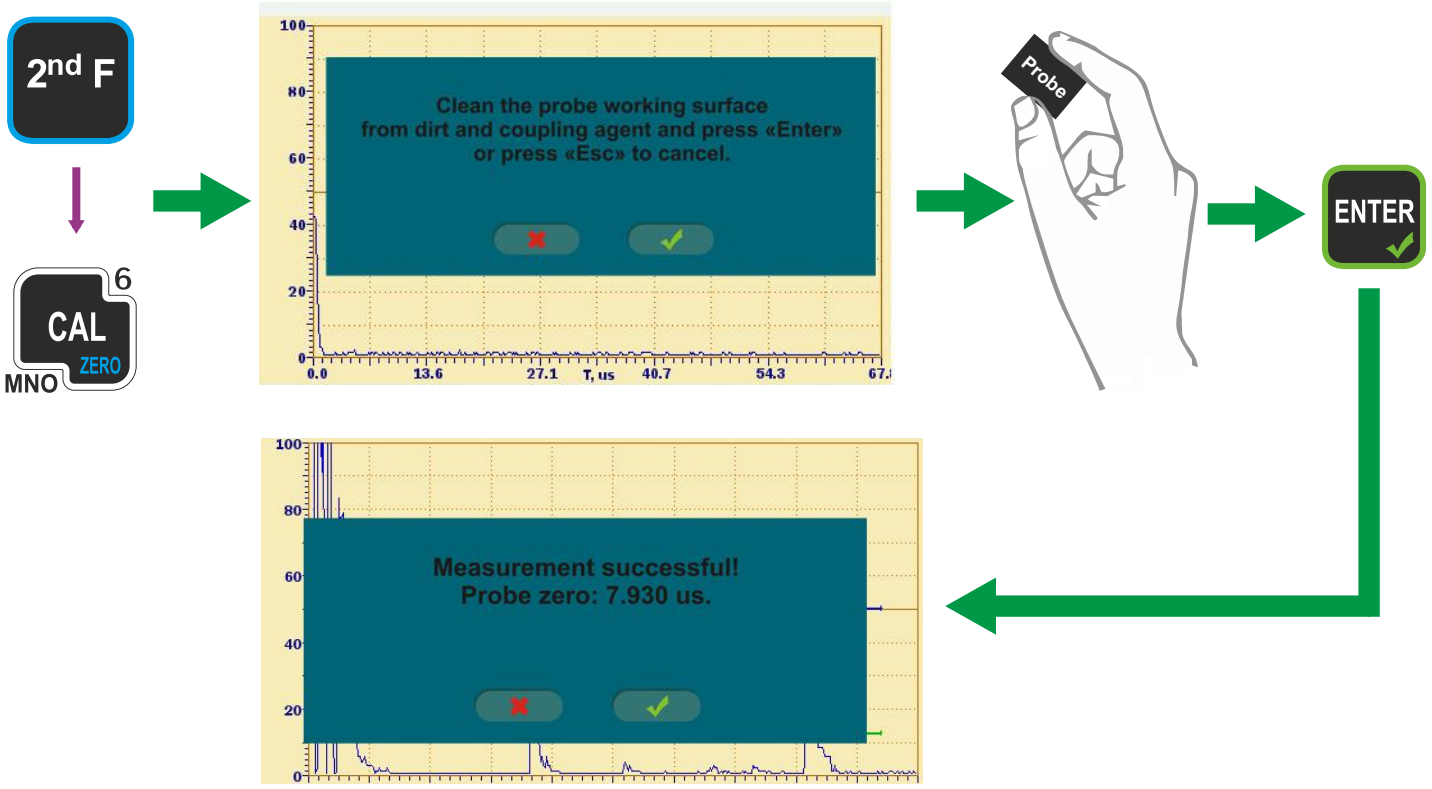
CHOOSING CONNECTED PROBE FROM THE LIST



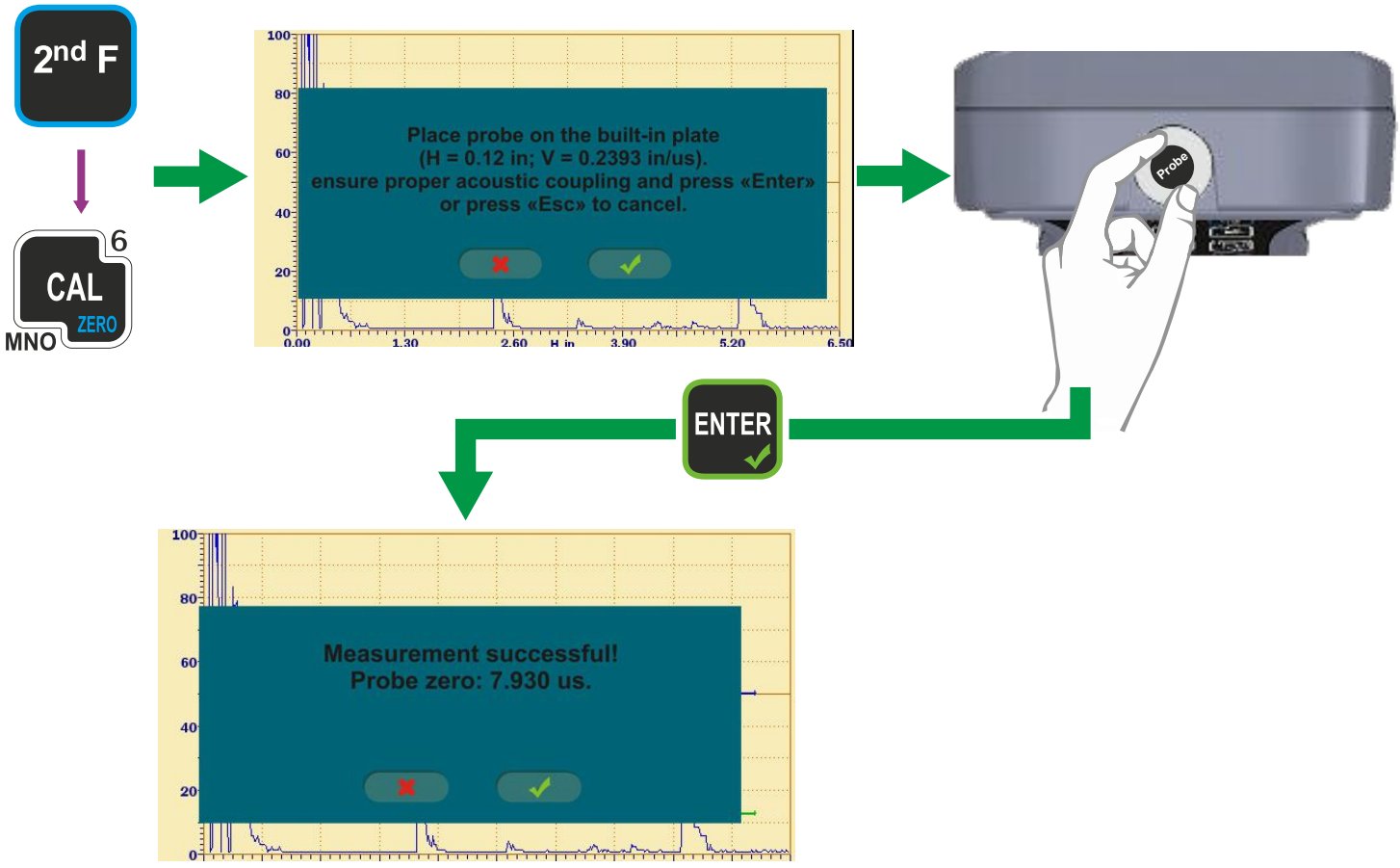
PROBE ZEROING

Choose zero calibration mode (PROBE → Zero cal. mode: in air / on block)

Zeroing in “in air” mode



Zeroing in “on block” mode

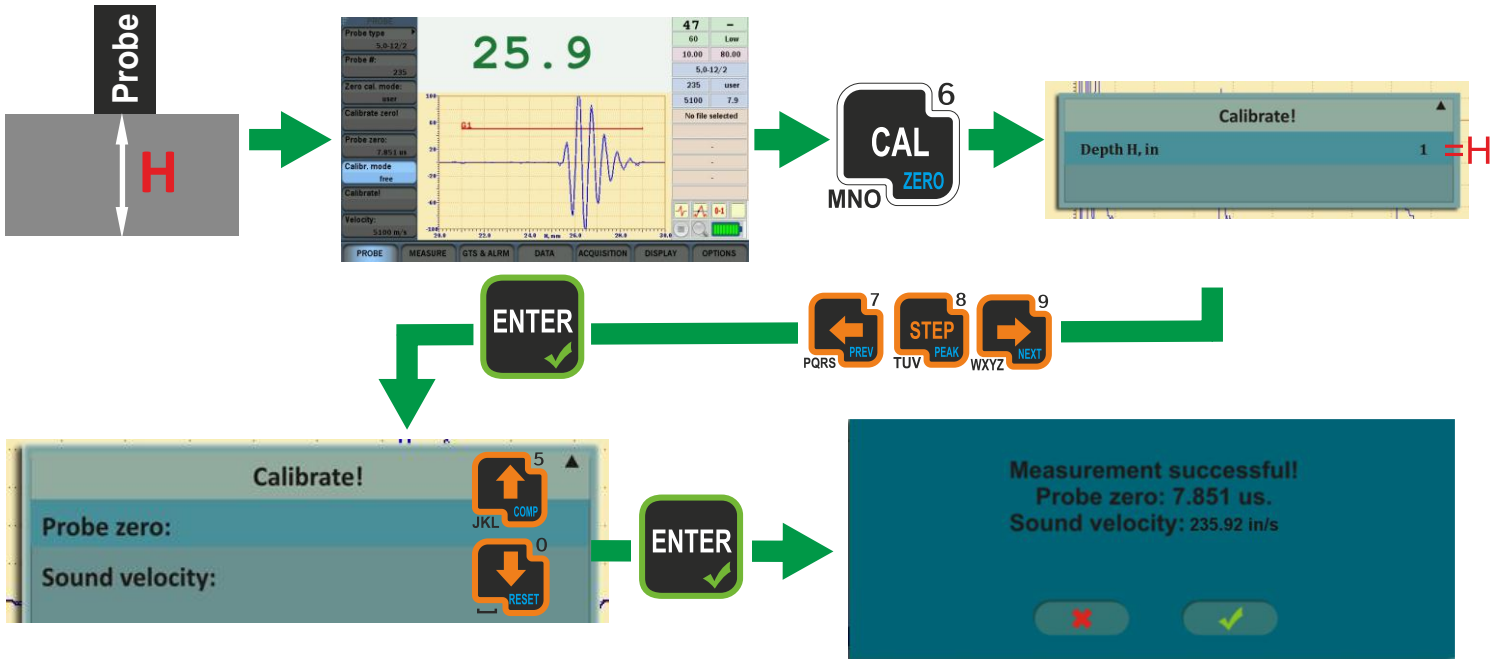


FREE CALIBRATION

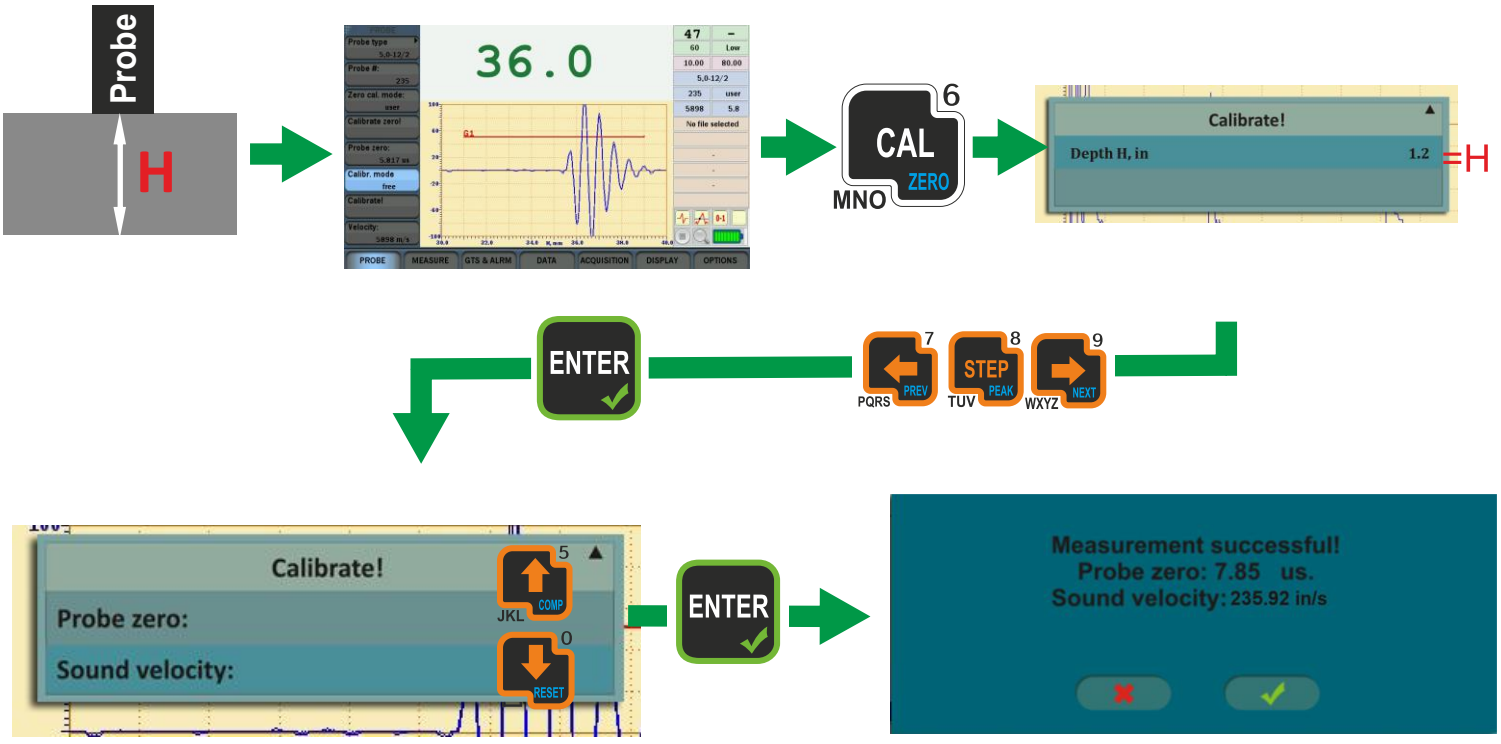
Should be chosen in PROBE → Calibr.mode

Prior to use free calibration all necessary preparations should be made and a thickness reading (can be incorrect) at the calibration block (or other object with known thickness) should be acquired.

Calibrating probe zero (sound velocity is already set)



Calibrating sound velocity (the probe is already zeroed)

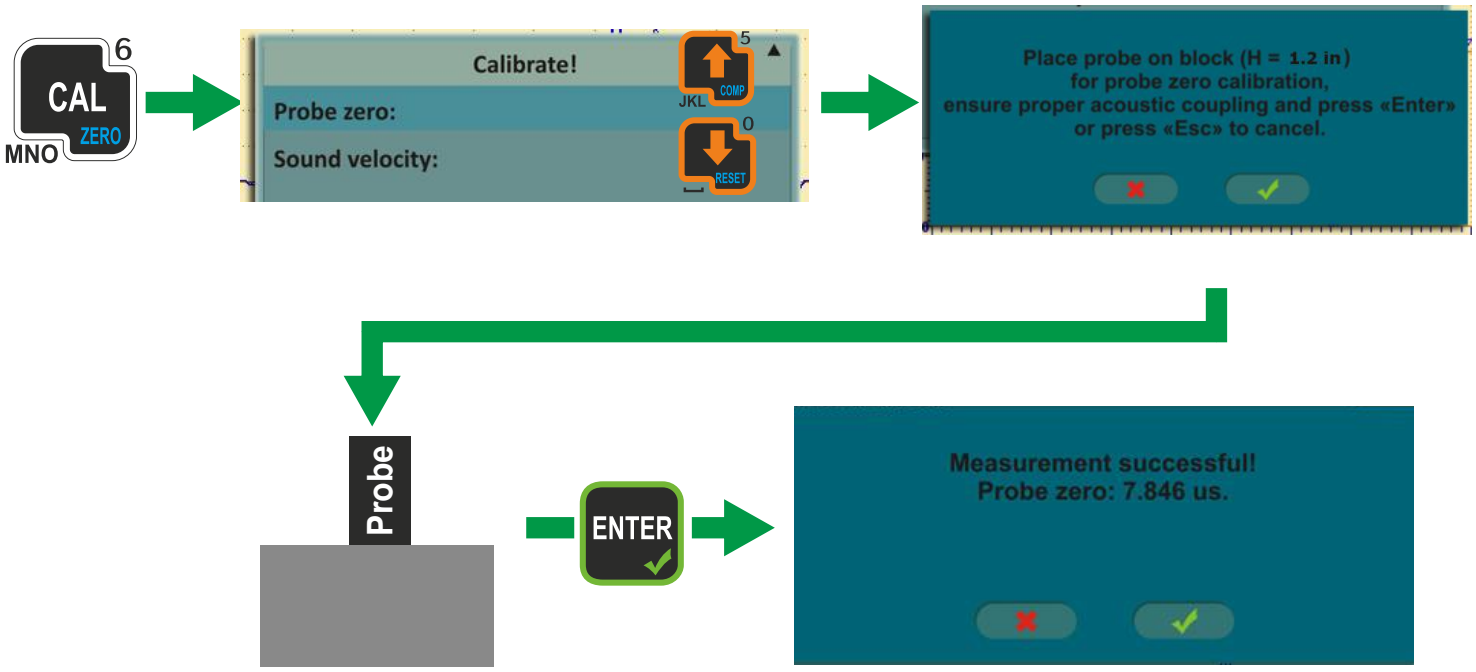


1-POINT CALIBRATION

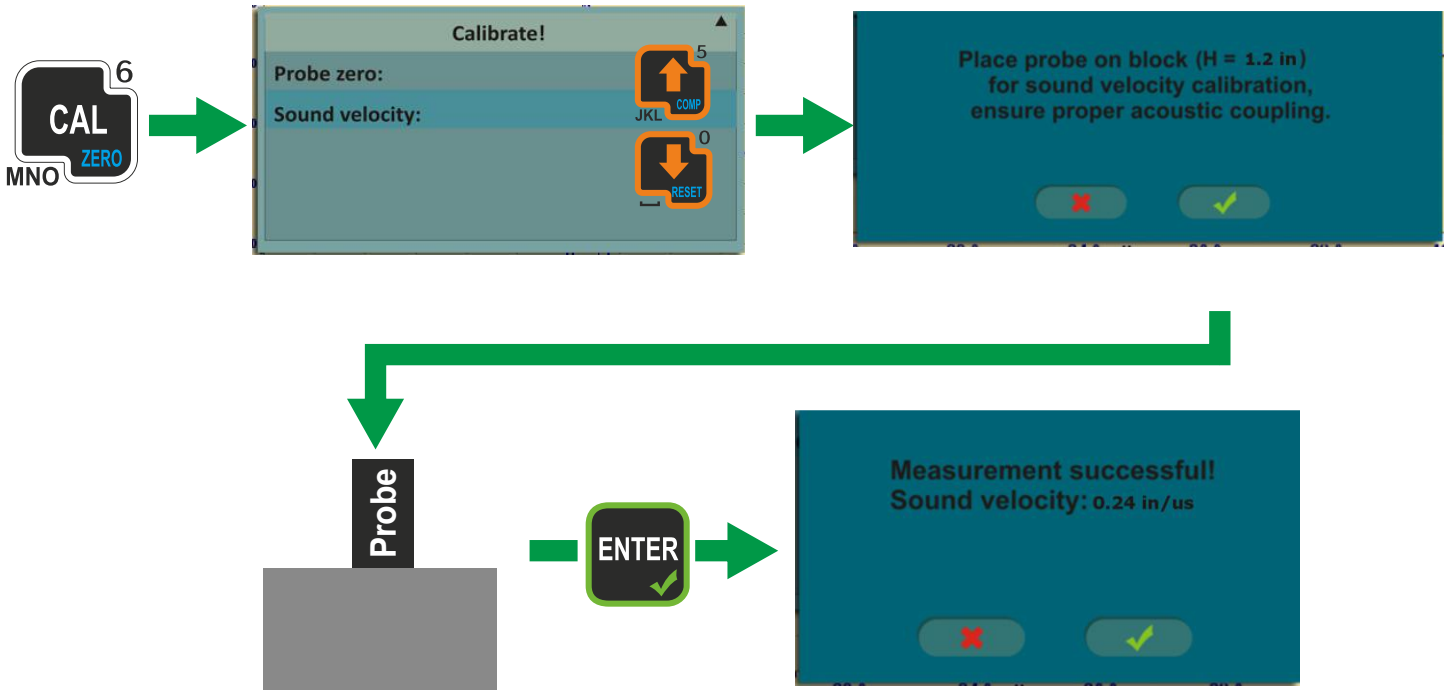
Should be chosen in PROBE → Calibr.mode

Prior to use 1-point calibration it is necessary to specify the calibration block parameters in OPTIONS → Block 1pt menu.

Calibrating probe zero (sound velocity is already set)

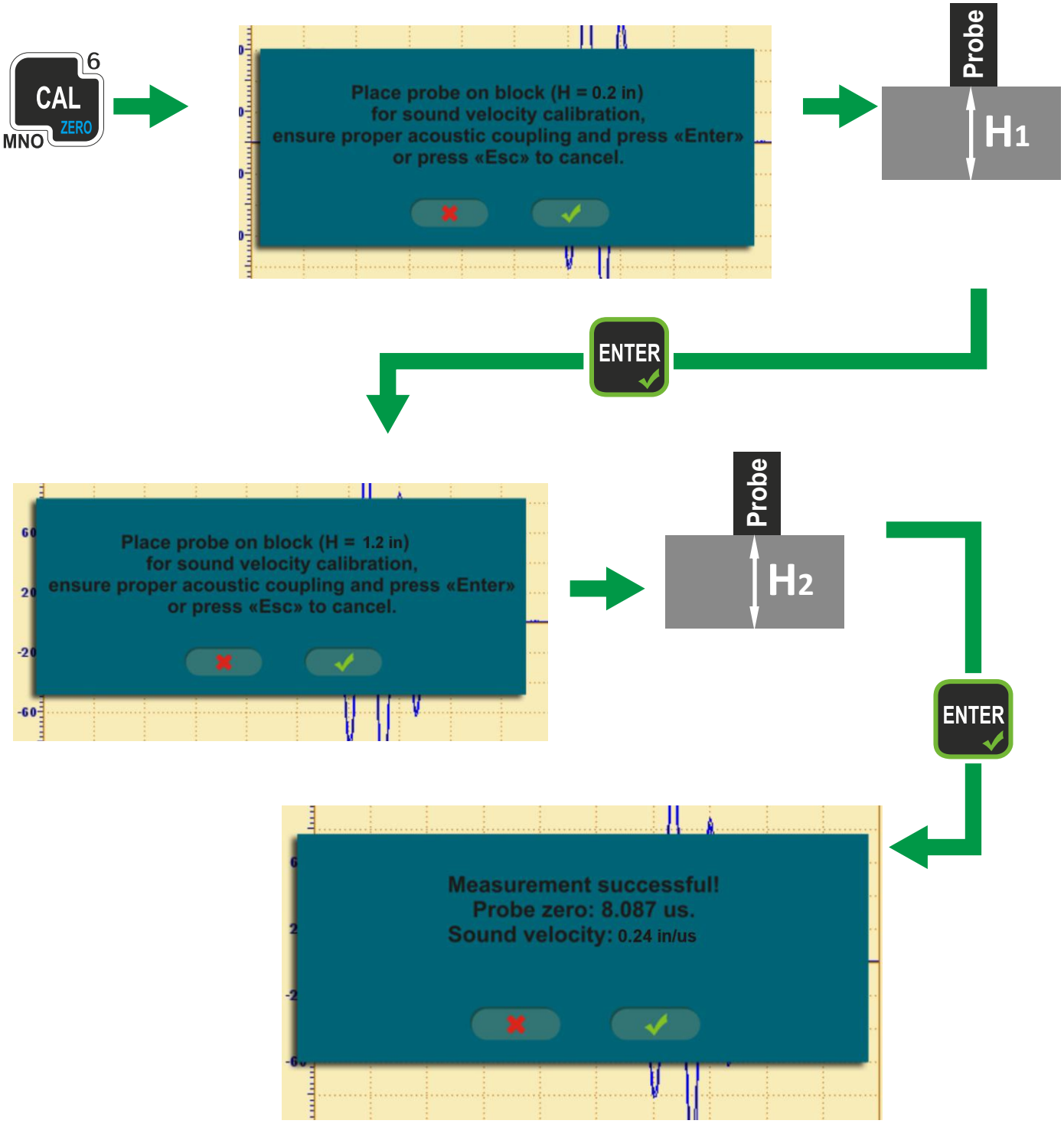


Calibrating sound velocity (the probe is already zeroed)



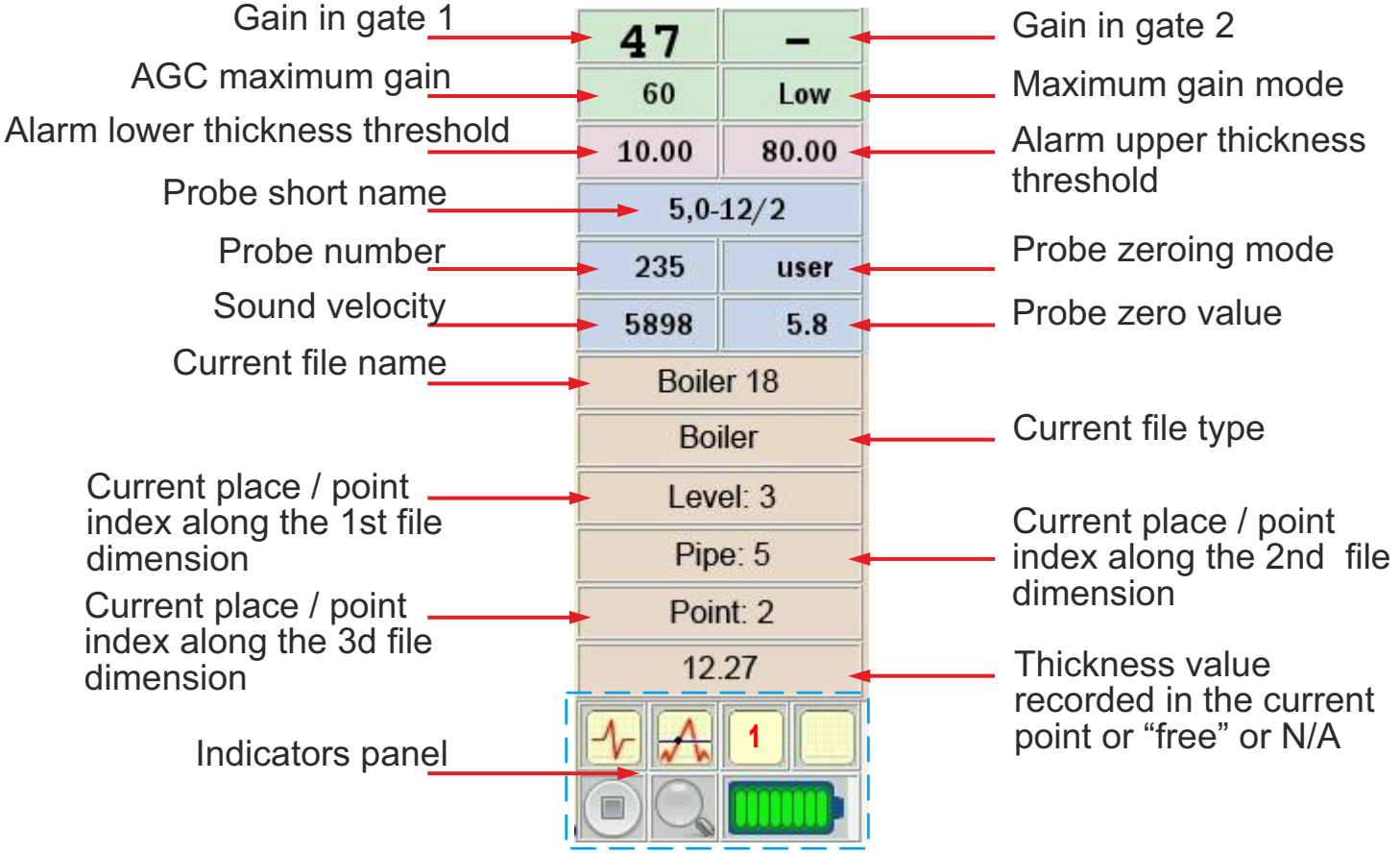
2-POINTS CALIBRATION

Should be chosen in PROBE → Calibr.mode
Prior to use 2-point calibration it is necessary to specify the calibration blocks parameters in OPTIONS → Block 2pts-1 and Block 2pts-2 menus.



Thicknesses of calibration blocks for 2-points calibration should differ at least 2 times.

INDICATION PANEL



INDICATORS

Rectification mode: / / / - **Radio Frequency / Full wave / Positive half waves / Negative half waves**

Measurement threshold: / - **Edge / 0-Edge (by zero crossing)**

Measurement mode: 1 / 1-2 - **Absolute (P-E) / Relative (E-E) measurements**

Direct manipulation: modes / ASC / G1 / G2 - **Off / A-Scan manipulation / Gate 1 manipulation / Gate 2 manipulation**

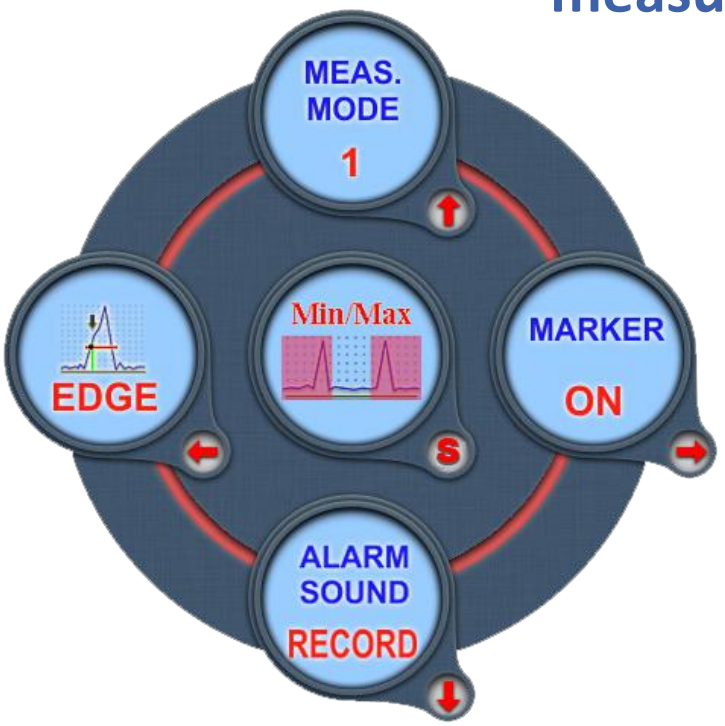
Indication of data collection condition at obtaining of slices / thickness maps: / / - **Stopped / Active / Paused**

Zoom modes: / 1 / 2 - **Off / Zooming gate 1 / Zooming gate 2**

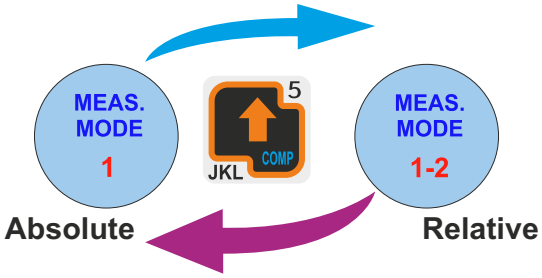
Battery indicator: ... - **Full / ... / Almost empty**

QUICK ACCESS TO MAIN PARAMETERS

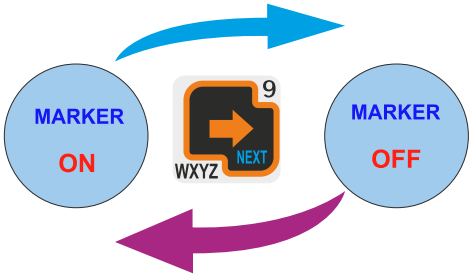
TG+ 1. Gates choice for absolute or relative measurements



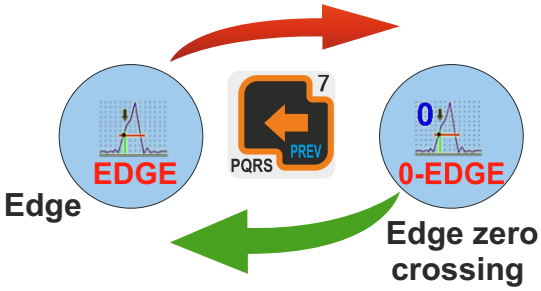
«Choice of the measurement mode: absolute or relative»



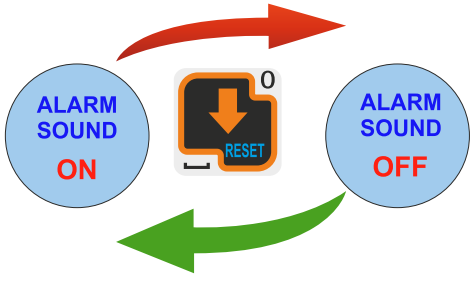
«Measurement point marker»



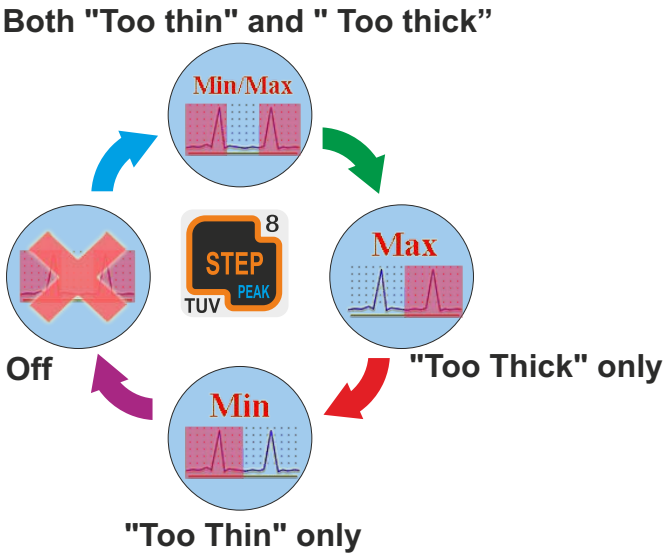
«Time/distance measurement threshold choice»



«Choice of the gate(s) level for the sound alarm»

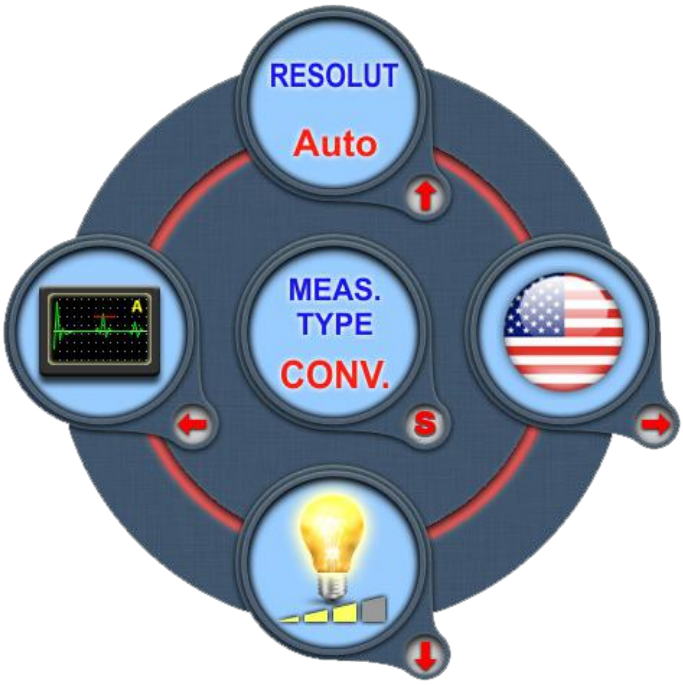


«Flaw alarm logic choice»

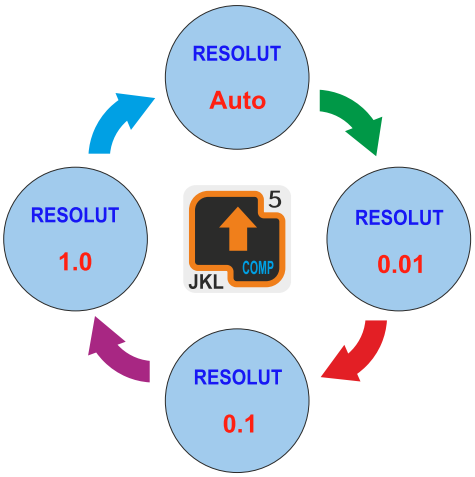


QUICK ACCESS TO MAIN PARAMETERS

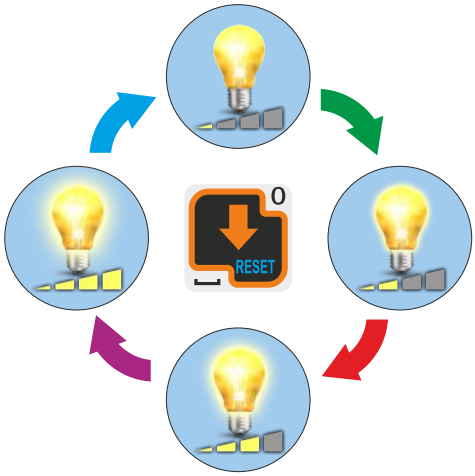
TG+ 2. Display options



«Resolution choice»

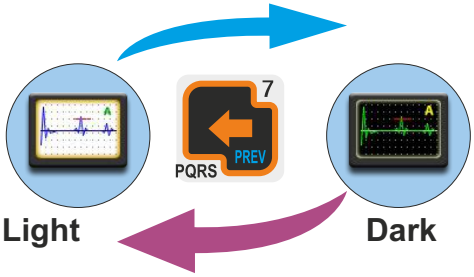


«Display brightness adjustment»

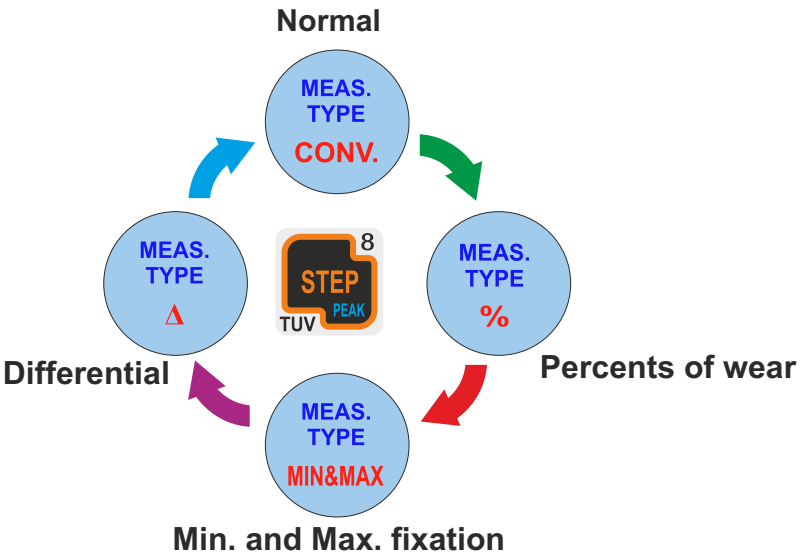


«Interface language choice»

«Switching color schemes»



«Measurement type choice»



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