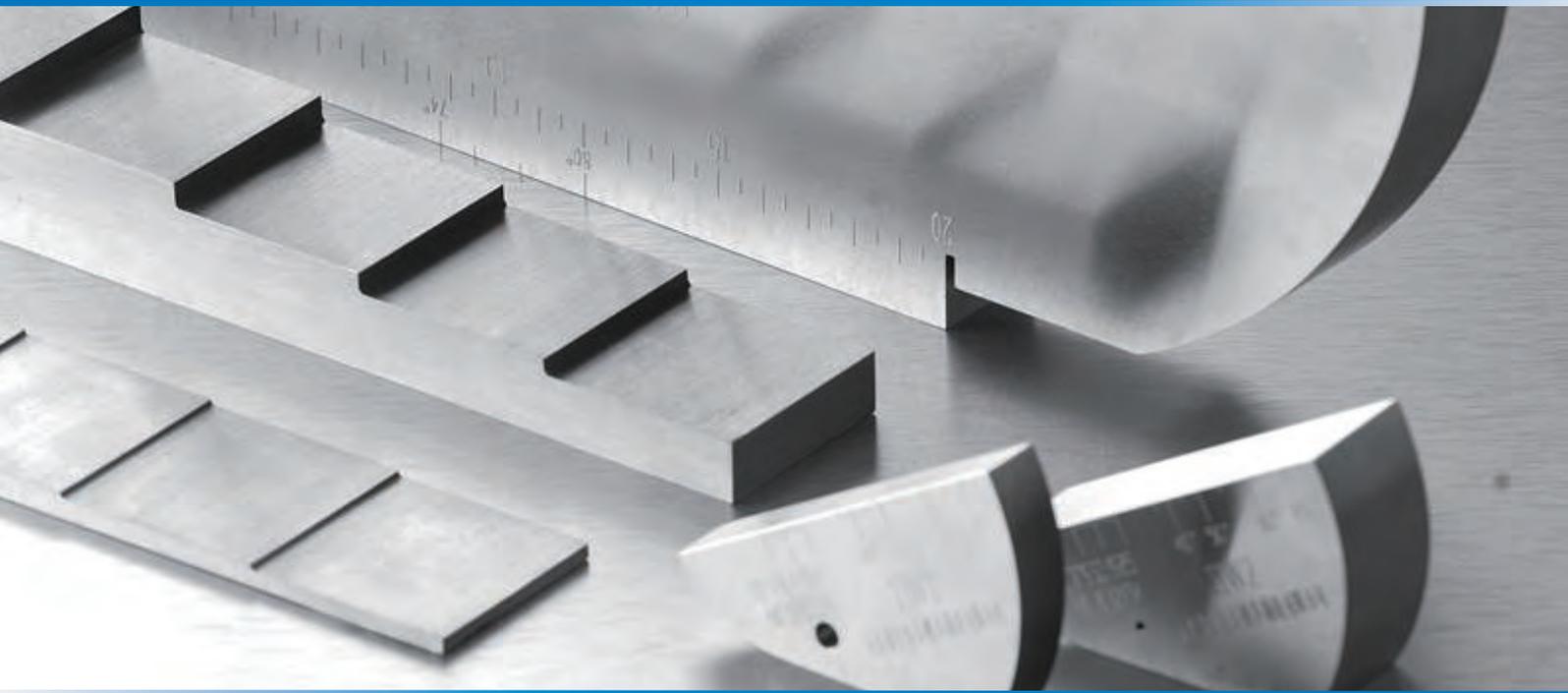


Ultrasonic Calibration Blocks & Welded Flawed Specimens



Ultrasonic Calibration Blocks

Custom blocks available upon request

All blocks are available in metric/ inch dimensions

Standard blocks available in 1018 steel, 304 stainless steel, and 7075-T6 aluminum

Welded Flawed Specimens for NDE training

Flawed Specimen tolerances ± 2 mm

Custom specimens available upon request

Three real flaws per specimen, randomly placed

SIUI



Ultrasonic Calibration Blocks

4/5-Step Block

Specifications:

ASTM E797

Calibration Function:

Straight Beam: thickness and linearity calibration, thickness gauging.



Calibration block No.1(V1)

Specifications:

ISO2400-2012

Calibration Function:

Calibration of shear and compression wave probes. Checking beam angle, emergent point and resolution. Calibration of time base and gain settings.

*We can provide V1 calibration block based on ISO2400-2012, BS 2704, ASTM E164, ISO 2400-1972E, AWS D1.1/D1.1M and AS 2083.



Calibration Block No.2 (V2)

Specifications:

ISO7963:2010

Calibration Function:

Small calibration block for on-site checking of miniature shear wave probe index, time base, beam angle and gain, engraved reference mark scales from 35 to 75 degrees.

*We can provide V2 calibration block based on ISO7963 and BS 2704.



Calibration Block No.3 (V3)

Specifications:

Calibration Function:

For calibrating ultrasonic flaw detection equipment in both laboratory and on-site conditions. This block is intended to function as a more compact and light-weight alternative to V1 or IIW-Type Test Blocks. Includes 25mm, 50mm, and 100mm radii, (2) 3.0mm diameter through holes, engraved reference mark scales, and a 0.4mm wide x 2.5mm deep slot.



Phased Array Test Block Type A

Specifications:

ASTM E2491-2013

Calibration Functions:

The Phased Array "Type A" Calibration Block is used during the initial setup and calibration of a phased array ultrasonic unit. It can be used to perform tasks such as beam angle verification, calibration for wedge delay, sensitivity calibration, performing DAC/TCG for thickness up to 50 mm, and crack sizing.



Phased Array Test Block Type B

Specifications:

ASTM E2491-2013

Calibration Functions:

The Phased Array "Type B" Calibration Block is used as baseline block to determine long-term instrument performance changes, generate DAC curves, and evaluate linear/angular resolution, focusing ability and beam steering capability.



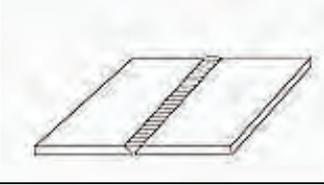
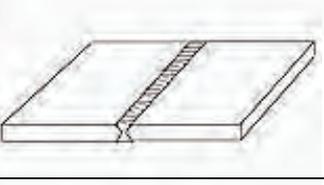
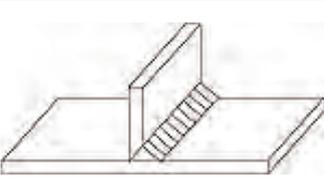
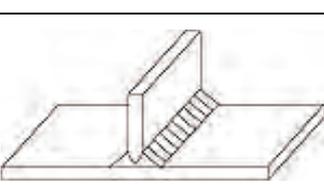
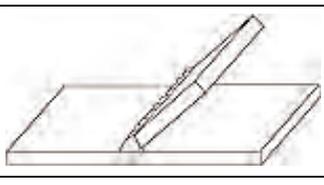
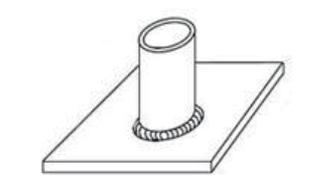
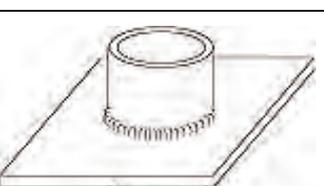
Ultrasonic Calibration Blocks

PAUT IIW Test Block	
<p>Specifications: ISO 19675</p> <p>Calibration Functions: Probe index, beam angle, beam squint angle, linearity of time base, calibration of time base, linearity of attenuator, linearity of screen height, pulse duration, measurement of dominant frequency, signal-to-noise ratio (SNR,) wedge delay, assess for grating lobes, active element assessment, sensitivity equalization for E-scans, sensitivity equalization for S-Scans, plotting check, element assignment, anisotropy assessment.</p>	
Miniature Angle Beam (ROMPAS) Calibration Block	
<p>Specifications: ASTM E164-2013</p> <p>Calibration Function: Straight Beam: distance angle beam, index point, sound path angle (30°-70°).</p>	
DSC Distance/ Sensitivity Calibration Block	
<p>Specifications: ASTM E164-2013</p> <p>Calibration Function: Straight Beam: distance, amplitude. Angle Beam: index point, sound path angle (45°-70°), distance, sensitivity. *We can provide DSC calibration block based on ASTM E164, AWS D1.1/D1.1M.</p>	
GS Series Calibration Block (Set of 7)	
<p>Specifications: NB/T47013.3-2015</p> <p>Calibration Function: GS Series Calibration Block is used for ultrasonic testing of circumferentially butt joints (type II welded joints) for pipes (applicable OD range 20-500mm).</p>	
DC Distance Calibration Block	
<p>Specifications: ASTM E164-2013</p> <p>Calibration Function: Straight Beam: distance, amplitude. Angle Beam: index point, distance. *We can provide DC calibration block based on ASTM E164, AWS D1.1/D1.1M.</p>	
SC Sensitivity Calibration Block	
<p>Specifications: ASTM E164-2013</p> <p>Calibration Function: Angle Beam: sound path angle (45°, 60°, 75°), sensitivity. *We can provide SC calibration block based on ASTM E164, AWS D1.1/D1.1M.</p>	
DS Distance/ Sensitivity Calibration Block	
<p>Specifications: AWS D1.1/D1.1M-2015</p> <p>Calibration Function: Straight Beam: distance, horizontal linearity, sensitivity.</p>	

Ultrasonic Calibration Blocks

RC (AWS) Resolution Calibration Block	
<p>Specifications: AWS D1.1/D1.1M-2015</p> <p>Calibration Function: Angle Beam: resolution (45°, 60°, 70°).</p>	
IOW Beam Profile Block	
<p>Specifications: API RP 2X-2004</p> <p>Calibration Function: Angle Beam: beam profile (45°, 60°, 70°), probe angle.</p> <p>*We can provide IOW calibration block based on API RP 2X, BS 2704, AS 2083.</p>	
ASME Basic Calibration Blocks	
<p>Specifications: ASME BPVC-V (2015)</p> <p>Calibration Function: Used for establishment of primary reference responses for UT examination of welds.</p>	
ASME Basic Calibration Blocks for Pipe	
<p>Specifications: ASME BPVC-V (2015)</p> <p>Calibration Functions: The basic calibration block fabricated for customer supplied section of pipe of the same diameter, schedule, heat treatment and material type as the material being examined.</p>	
ASTM Area/ Amplitude (Set of 8)	
<p>Specifications: ASTM E127-2015 or ASTM E428-2008</p> <p>Calibration Functions: Determining relationship comparisons of flaw size and echo amplitude.</p>	
ASTM Distance/ Area Amplitude (Set of 10)	
<p>Specifications: ASTM E127-2015 or ASTM E428-2008</p> <p>Calibration Functions: Determining relationship comparisons of flaw size and echo amplitude.</p>	
ASTM Distance Amplitude (Set of 19)	
<p>Specifications: ASTM E127-2015 or ASTM E428-2008</p> <p>Calibration Functions: Comparisons of distance amplitude relationships.</p>	

Flawed Specimens

No.	Specimen Type	Dimensions: mm	Specimens
UT-01	Plate with SV	300×300×12	
UT-02		300×300×16	
UT-03		300×300×20	
UT-04	Plate with DV	300×300×20	
UT-05		300×300×22	
UT-06		300×300×25	
UT-07		300×300×30	
UT-08	Pipe with SV	φ 105×12×300	
UT-09		φ 155×16×300	
UT-10		φ 155×20×300	
UT-11		φ 155×25×300	
UT-12		φ 155×12×300	
UT-13		φ 200×12×300	
UT-14		φ 200×20×300	
UT-15		φ 200×25×300	
UT-16		φ 290×25×300	
UT-17	Tee with SV	200×250×300×12	
UT-18		200×250×300×20	
UT-19		200×250×300×25	
UT-20	Tee with DV	200×250×300×20	
UT-21		200×250×300×25	
UT-22	Y Joint with SV	200×250×300×20	
UT-23	Node & Carrier	Pipe: φ 105×12×150	
UT-24		Plate: 400×400×20	
	Pipe: φ 200×12×150		
	Plate: 500×500×20		
UT-25	Nozzle & Carrier (set through)	Pipe: φ 105×12×150	
UT-26		Plate: 400×400×20	
		Pipe: φ 200×12×150	
	Plate: 500×500×20		

*For flawed specimens, each one will have three artificial flaws at random locations. The welding flaws include crack, air hole, slag inclusion, lack of fusion, lack of penetration, ect. Test report is available upon request.

Flawed Specimens Images



Plate with SV



Plate with DV



Tee with DV



Tee with SV



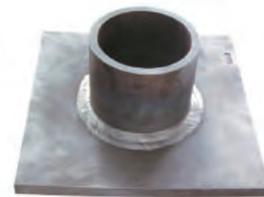
Pipe with SV (φ 83×6)



Pipe with SV (φ 203×6)



Pipe with SV (φ 203×12)



Node & Carrier

SIUI

Shantou Institute of Ultrasonic Instruments Co., Ltd.

Add: #77, Jinsha Road, Shantou 515041, Guangdong, China

Tel: +86-754-88250150 Fax: +86-754-88251499

E-mail: siui@siui.com Website: <http://www.siui.com>



Specifications and appearance are subject to change without prior notice.
DCY2.791.EN.Calibration Block.CY/6B01