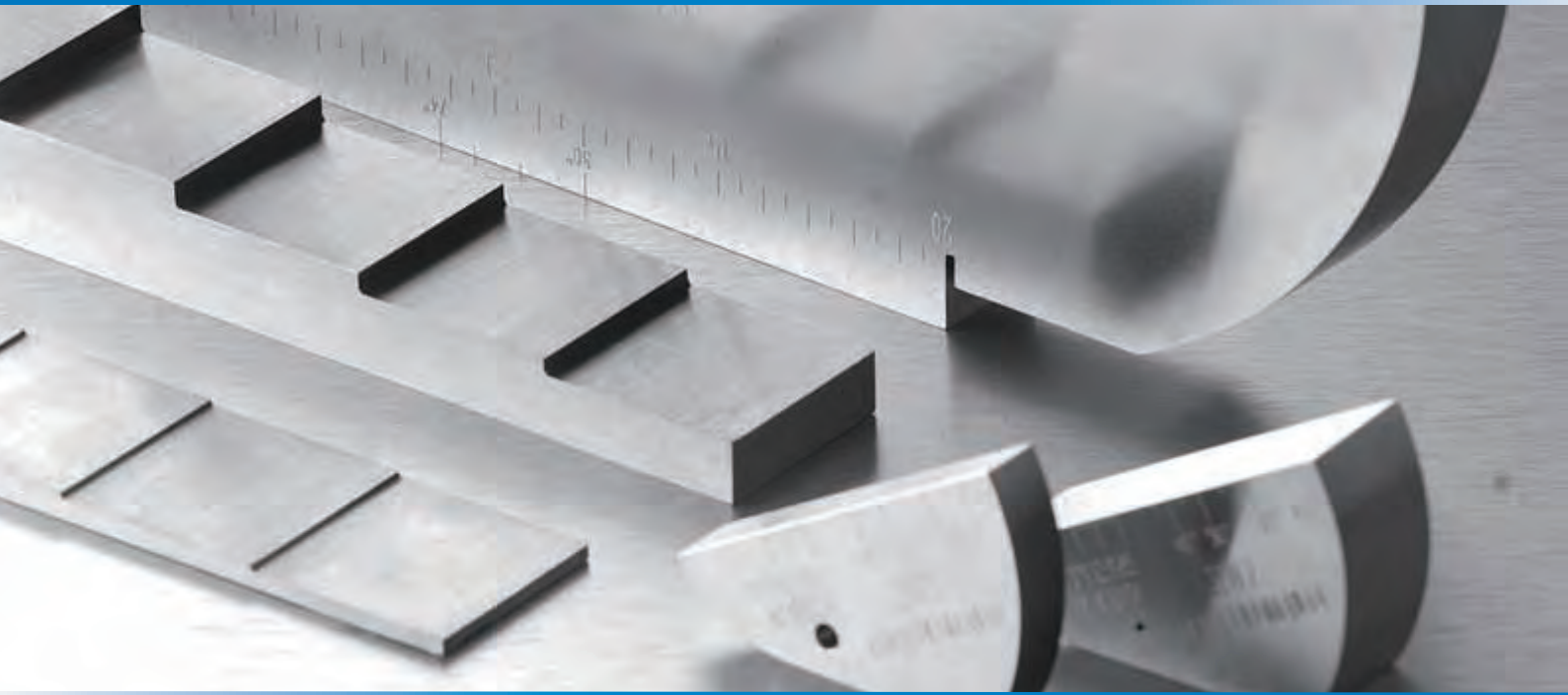


# Ultrasonic Calibration Blocks & Welded Flawed Specimens



## 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  $\pm 2$ mm

Custom specimens available upon request

Three real flaws per specimen, randomly placed



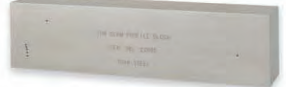

# SIUI



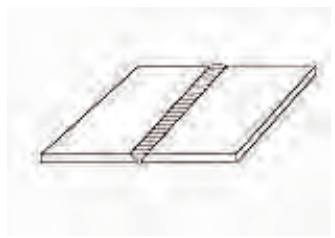
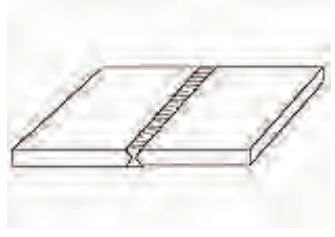

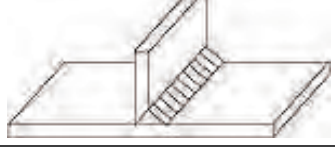
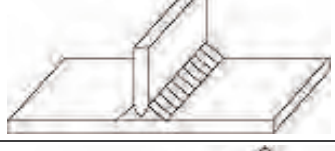

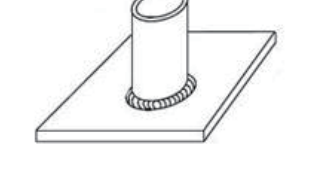
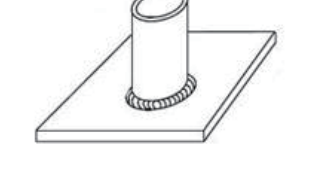

# Ultrasonic Calibration Blocks

4/5/7-Step Block	
<p><b>Specifications:</b> ASTM E797</p> <p><b>Calibration Function:</b> Straight Beam: thickness and linearity calibration, thickness gauging.</p>	
Calibration block No.1(V1)	
<p><b>Specifications:</b> EN ISO2400-2012</p> <p><b>Calibration Function:</b> 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 EN ISO2400-2012, BS2704, ASTM E164 and ISO 2400.</p>	
Calibration Block No.2(V2)	
<p><b>Specifications:</b> EN27963</p> <p><b>Calibration Function:</b> 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 EN27963, BS2704 and ISO 7963.</p>	
Phased Array Test Block Type A	
<p><b>Specifications:</b> ASME Code Cases 2541,2557,2558</p> <p><b>Calibration Functions:</b> 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.</p>	
Phased Array Test Block Type B	
<p><b>Specifications:</b> ASME Code Cases 2541,2557,2558</p> <p><b>Calibration Functions:</b> 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.</p>	
Miniature Angle Beam (ROMPAS) Calibration Block	
<p><b>Specifications:</b> ASTM E164</p> <p><b>Calibration Function:</b> Straight Beam: distance angle beam, index point, sound path angle (30°-70°).</p>	
DSC Distance/ Sensitivity Calibration Block	
<p><b>Specifications:</b> ASTM E164, AWS D1.1/D1.1M</p> <p><b>Calibration Function:</b> Straight Beam: distance, amplitude. Angle Beam: index point, sound path angle (45°-70°), distance, sensitivity.</p>	

# Ultrasonic Calibration Blocks

DC Distance Calibration Block	
<p><b>Specifications:</b> ASTM E164, AWS D1.1/D1.1M</p> <p><b>Calibration Function:</b> Straight Beam: distance, amplitude. Angle Beam: index point, distance.</p>	
SC Sensitivity Calibration Block	
<p><b>Specifications:</b> ASTM E164, AWS D1.1/D1.1M</p> <p><b>Calibration Function:</b> Angle Beam: sound path angle (45°, 60°, 75°), sensitivity.</p>	
DS Distance/ Sensitivity Calibration Block	
<p><b>Specifications:</b> AWS D1.1/D1.1M</p> <p><b>Calibration Function:</b> Straight Beam: distance, horizontal linearity, sensitivity.</p>	
RC (AWS) Resolution Calibration Block	
<p><b>Specifications:</b> AWS D1.1/D1.1M</p> <p><b>Calibration Function:</b> Angle Beam: resolution (45°, 60°, 70°).</p>	
IOW Beam Profile Block	
<p><b>Specifications:</b> API RP 2X</p> <p><b>Calibration Function:</b> Angle Beam: beam profile (45°, 60°, 70°), probe angle.</p>	
ASME Basic Calibration Blocks	
<p><b>Specifications:</b> ASME BPVC-V (2010)</p> <p><b>Calibration Function:</b> Used for establishment of primary reference responses for UT examination of welds.</p>	
ASME Basic Calibration Blocks for Pipe	
<p><b>Specifications:</b> ASME SEC V Articles 4 Fig.T-434.3</p> <p><b>Calibration Functions:</b> 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><b>Specifications:</b> ASME-E-127 or ASTM-E-428</p> <p><b>Calibration Functions:</b> Determining relationship comparisons of flaw size and echo amplitude.</p>	
ASTM Distance/ Area Amplitude (Set of 10)	
<p><b>Specifications:</b> ASME-E-127 or ASTM-E-428</p> <p><b>Calibration Functions:</b> Determining relationship comparisons of flaw size and echo amplitude.</p>	
ASTM Distance Amplitude (Set of 19)	
<p><b>Specifications:</b> ASME-E-127 or ASTM-E-428</p> <p><b>Calibration Functions:</b> 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		300×400×20	
UT-04	Plate with DV	300×300×20	
UT-05		300×300×25	
UT-06		300×300×30	
UT-07	Pipe with SV	φ 108×12×300	
UT-08		φ 159×20×300	
UT-09		φ 159×25×300	
UT-10		φ 203×12×300	
UT-11		φ 203×20×300	
UT-12		φ 203×25×300	
UT-13	Tee with SV	150×150×300×20	
UT-14		150×150×300×25	
UT-15	Tee with DV	150×150×300×20	
UT-16		150×150×300×25	
UT-17	Y Joint with SV	150×230×300×20	
UT-18	Node & Carrier	Pipe: φ 108×12×150	
UT-19		Plate: 400×400×20	
	Node & Carrier	Pipe: φ 203×12×150	
UT-20		Plate: 500×500×20	
UT-21	Nozzle & Carrier (set through)	Pipe: φ 108×12×150	
	Nozzle & Carrier (set through)	Pipe: φ 203×12×150	
		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



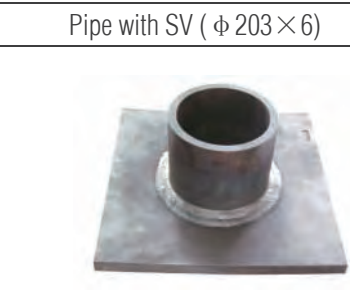
Pipe with SV ( φ 83 × 6)



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.Calibration Block.CY/6A02