Ultrasonic Calibration Blocks &
Welded Flawed Specimens for NDE Training

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+/−2mm
Custom specimens available upon request
Three real flaws per specimen, randomly placed
# Ultrasonic Calibration Blocks

## 4-Step Block

**Specifications:**
ASTM E797

**Calibration Function:**
Straight Beam: thickness and linearity calibration, thickness gauging.

## Calibration block No.1 (V1)

**Specifications:**
EN12223

**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 EN12233, BS2704, ASTM E164 and ISO 2400.

## Calibration Block No.2 (V2)

**Specifications:**
ISO 7963

**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 EN27963, BS2704, ASTM E164 and ISO 7963.

## Phased Array Test Block Type A

**Specifications:**
ASME Code Cases 2541,2557,2558

**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:**
ASME Code Cases 2541,2557,2558

**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.

## Miniature Angle Beam (ROMPAS) Calibration Block

**Specifications:**
ASTM E164

**Calibration Function:**
Straight Beam: distance angle beam, index point, sound path angle (30°-70°).

## DSC Distance/Sensitivity Calibration Block

**Specifications:**
ASTM E164, AWS D1.1/D1.1M

**Calibration Function:**
Straight Beam: distance, amplitude. Angle Beam: index point, sound path angle (45°-70°), distance, sensitivity.
### DC Distance Calibration Block

**Specifications:**
ASTM E164, AWS D1.1/D1.1M

**Calibration Function:**

### SC Sensitivity Calibration Block

**Specifications:**
ASTM E164, AWS D1.1/D1.1M

**Calibration Function:**
Angle Beam: sound path angle (45°, 60°, 75°), sensitivity.

### DS Distance/Sensitivity Calibration Block

**Specifications:**
AWS D1.1/D1.1M

**Calibration Function:**
Straight Beam: distance, horizontal linearity, sensitivity.

### RC (AWS) Resolution Calibration Block

**Specifications:**
AWS D1.1/D1.1M

**Calibration Function:**
Angle Beam: resolution (45°, 60°, 70°).

### IOW Beam Profile Block

**Specifications:**
API RP 2X

**Calibration Function:**
Angle Beam: beam profile (45°, 60°, 70°), probe angle.

### ASME Basic Calibration Blocks

**Specifications:**
ASME BPVC-V (2010)

**Calibration Function:**
Used for establishment of primary reference responses for UT examination of welds.

### ASME Basic Calibration Blocks for Pipe

**Specifications:**
ASME BPVC-V (2010)

**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.

### ASTM Area/Amplitude (Set of 8)

**Specifications:**
ASME-E-127 or ASTM-E-428

**Calibration Functions:**
Determining relationship comparisons of flaw size and echo amplitude.

### ASTM Distance/Area Amplitude (Set of 10)

**Specifications:**
ASME-E-127 or ASTM-E-428

**Calibration Functions:**
Determining relationship comparisons of flaw size and echo amplitude.

### ASTM Distance Amplitude (Set of 19)

**Specifications:**
ASME-E-127 or ASTM-E-428

**Calibration Functions:**
Comparisons of distance amplitude relationships.
## Flawed Specimens

<table>
<thead>
<tr>
<th>No.</th>
<th>Specimen Type</th>
<th>Dimensions: mm</th>
<th>Specimens</th>
</tr>
</thead>
<tbody>
<tr>
<td>UT-01</td>
<td>Plate with SV</td>
<td>300 × 300 × 6</td>
<td></td>
</tr>
<tr>
<td>UT-02</td>
<td></td>
<td>300 × 300 × 12</td>
<td></td>
</tr>
<tr>
<td>UT-03</td>
<td></td>
<td>300 × 300 × 20</td>
<td></td>
</tr>
<tr>
<td>UT-04</td>
<td></td>
<td>300 × 300 × 20</td>
<td></td>
</tr>
<tr>
<td>UT-05</td>
<td>Plate with DV</td>
<td>300 × 300 × 25</td>
<td></td>
</tr>
<tr>
<td>UT-06</td>
<td></td>
<td>300 × 300 × 30</td>
<td></td>
</tr>
<tr>
<td>UT-07</td>
<td>Pipe with SV</td>
<td>83 × 12 × 300</td>
<td></td>
</tr>
<tr>
<td>UT-08</td>
<td></td>
<td>159 × 12 × 300</td>
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</tr>
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<td>UT-09</td>
<td></td>
<td>159 × 25 × 300</td>
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</tr>
<tr>
<td>UT-10</td>
<td></td>
<td>203 × 12 × 300</td>
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<td>UT-11</td>
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<td>203 × 25 × 300</td>
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<td>UT-12</td>
<td></td>
<td>325 × 12 × 300</td>
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</tr>
<tr>
<td>UT-13</td>
<td>Tee with SV</td>
<td>150 × 150 × 300 × 20</td>
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<tr>
<td>UT-14</td>
<td></td>
<td>150 × 150 × 300 × 25</td>
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<tr>
<td>UT-15</td>
<td></td>
<td>150 × 150 × 300 × 25</td>
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</tr>
<tr>
<td>UT-16</td>
<td>Tee with DV</td>
<td>150 × 150 × 300 × 20</td>
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<tr>
<td>UT-17</td>
<td></td>
<td>150 × 150 × 300 × 25</td>
<td></td>
</tr>
<tr>
<td>UT-18</td>
<td>Node &amp; Carrier</td>
<td>Pipe: 108 × 12 × 150</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Plate: 400 × 400 × 25</td>
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<tr>
<td>UT-19</td>
<td></td>
<td>Pipe: 203 × 12 × 150</td>
<td></td>
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<td>Plate: 500 × 500 × 25</td>
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<tr>
<td>UT-20</td>
<td>Nozzle &amp; Carrier (set through)</td>
<td>Pipe: 108 × 12 × 150</td>
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<td>Plate: 400 × 400 × 25</td>
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<tr>
<td>UT-21</td>
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<td>Pipe: 203 × 12 × 150</td>
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<tr>
<td></td>
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<td>Plate: 500 × 500 × 25</td>
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*Test report is available upon request.*
<table>
<thead>
<tr>
<th>Flawed Specimens Images</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Plate with SV</td>
<td>Plate with DV</td>
</tr>
<tr>
<td>Tee with DV</td>
<td>Tee with SV</td>
</tr>
<tr>
<td>Pipe with SV (φ 83×6)</td>
<td>Pipe with SV (φ 203×6)</td>
</tr>
<tr>
<td>Pipe with SV (φ 203×12)</td>
<td>Node &amp; Carrier</td>
</tr>
</tbody>
</table>

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