

# Sonic Rubber Series

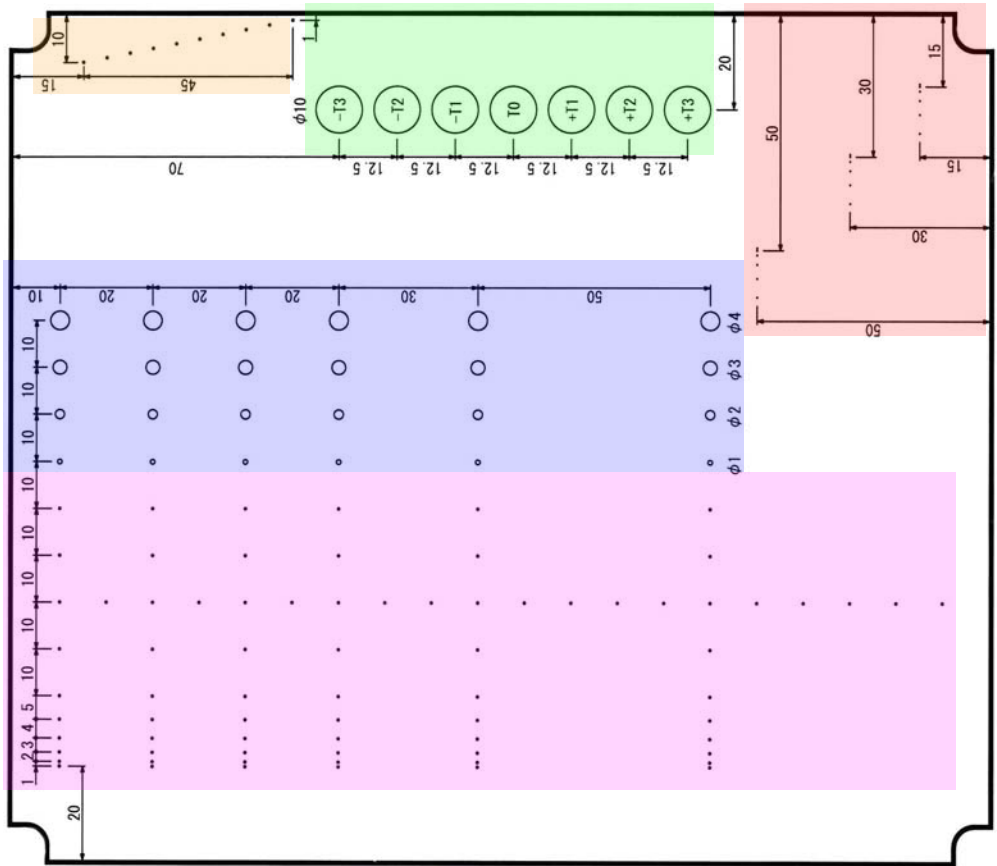
Manual for Multipurpose phantom N-365

# Targets layout

Close range resolution

Gray Scale

Axial resolution



Angular resolution

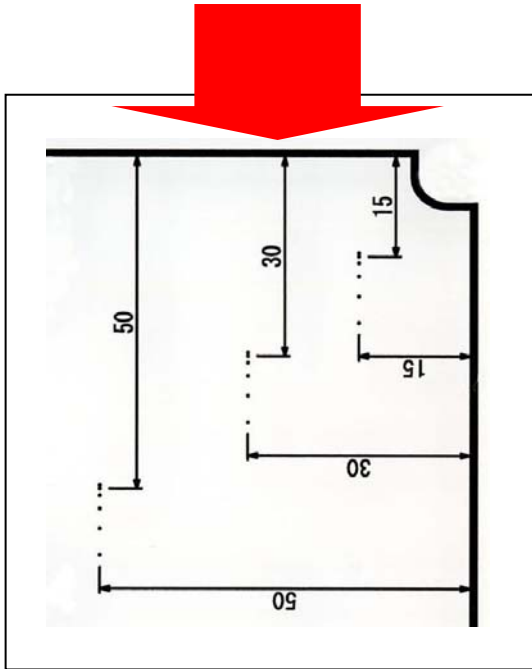


Cyst targets  
String target



This phantom is designed to allow scanning from all 4 side walls.

# Axial resolution



Use the same target as 'angular resolution'

Depth of the shallowest targets:

15,30,50mm depth

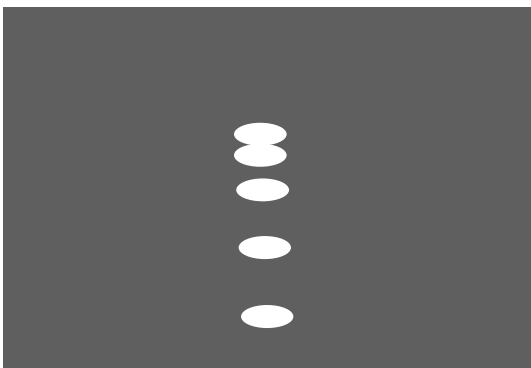
Target diameter: 0.05mm

Spaces between targets:

0.5,1,2,3mm



Linear Probe Image

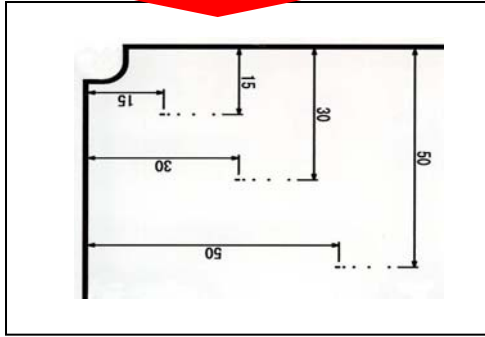


Example

Axial resolution:1mm

2 targets with 0.5mm clearance are not recognized separately.

# Angular resolution

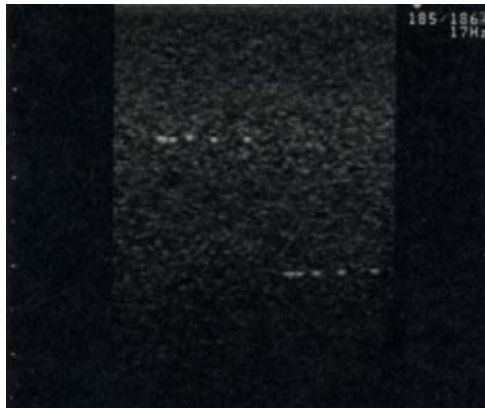


Use the same targets as axial resolution

Depths:

15,30,50mm depth

Target diameter: 0.05mm



Spaces between target:

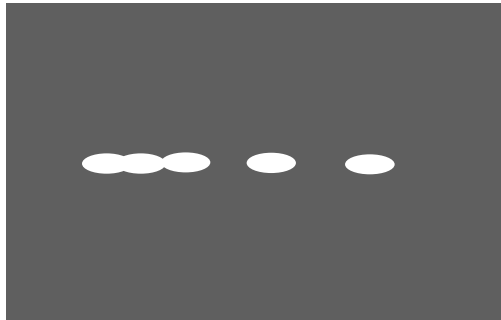
0.5,1,2,3mm

Linear Probe Image

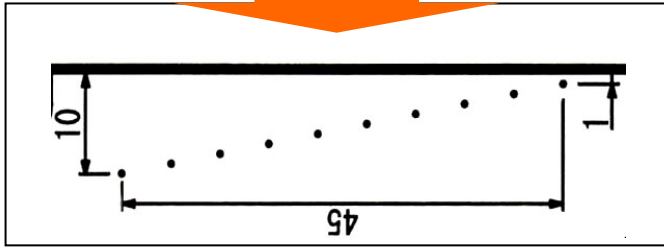
Example

Angular resolution:1mm

3 targets with 0.5mm, 1mm clearance are not recognized separately.



# Close range resolution

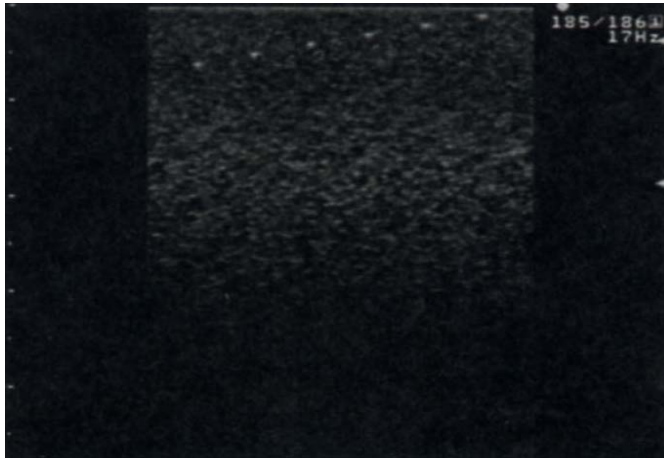


Depth range of 1-10 mm depth

(10 targets are embedded)

Target diameter 0.1 mm

Spaces between target :5 mm

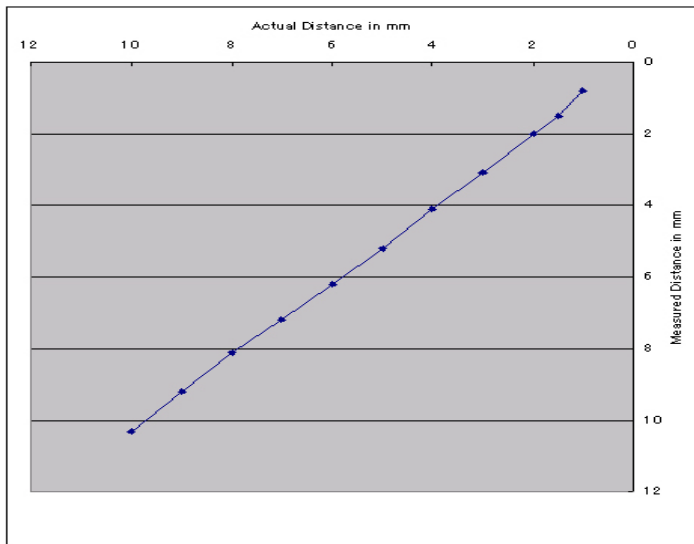


Scan the targets with the minimum depth of the view setting and identify the target visible at the shallowest point.

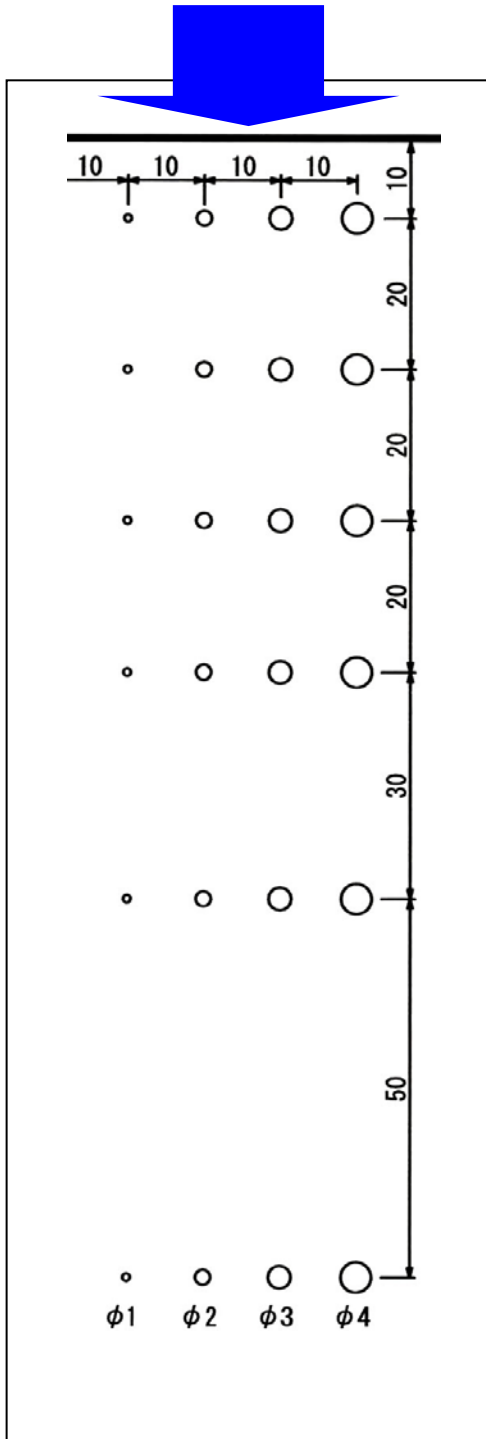
Linear Probe Image

## Example

Graph showing relationship between the actual depth of targets and the results of automatic measurement by an instrument.



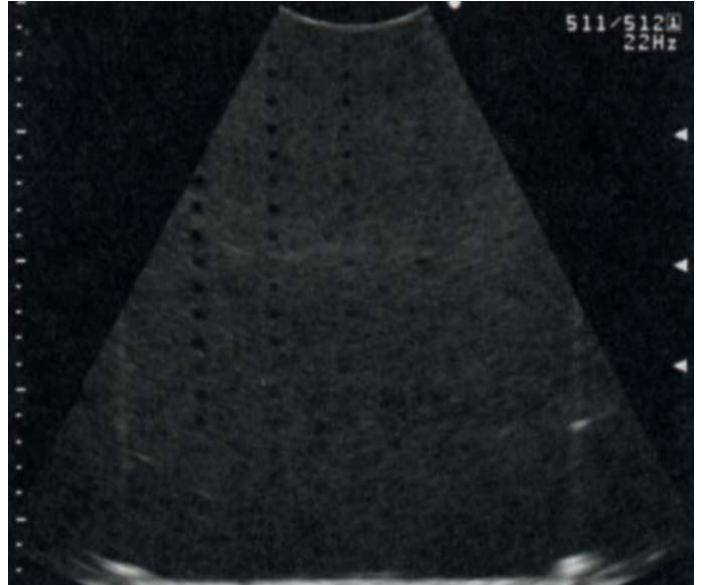
# Cyst targets



Target diameters 1, 2, 3, 4mm

Target depths:

10, 30, 50, 70, 100, 150mm

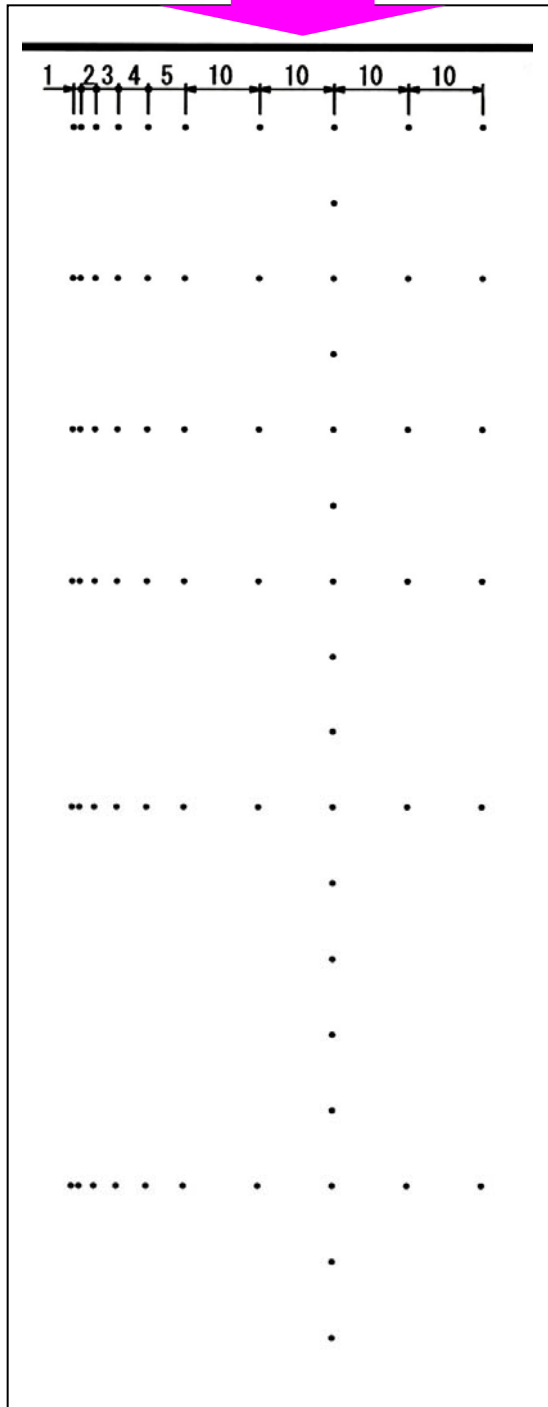


Convex Probe Image

Find the deepest point where the non-resonance cyst targets in various diameters are visible against the background of speckle pattern.

This phantom is designed to allow the scanning from 4 sides, which provides more variety of checkup options.

# String targets



Target diameter: 0.1mm

Target depths: from 10 to 200mm

Spaces between targets: 10mm

Horizontal spaces between targets:

1, 2, 3, 4, 5, 10mm

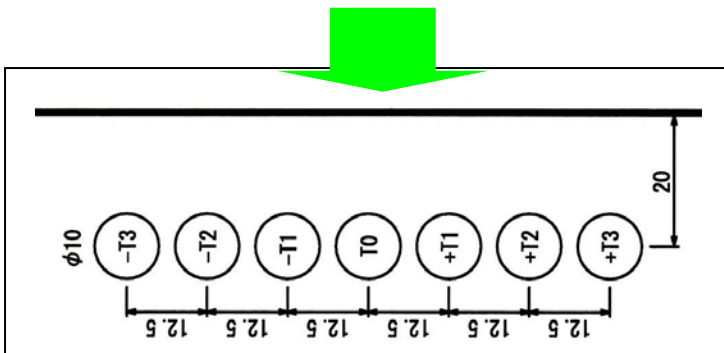


Convex Probe Image

Measure the intervals between the targets and compare the result with actual distances.

This phantom is designed to allow the scanning from 4 sides, which provides more variety of checkup options.

# Gray scale



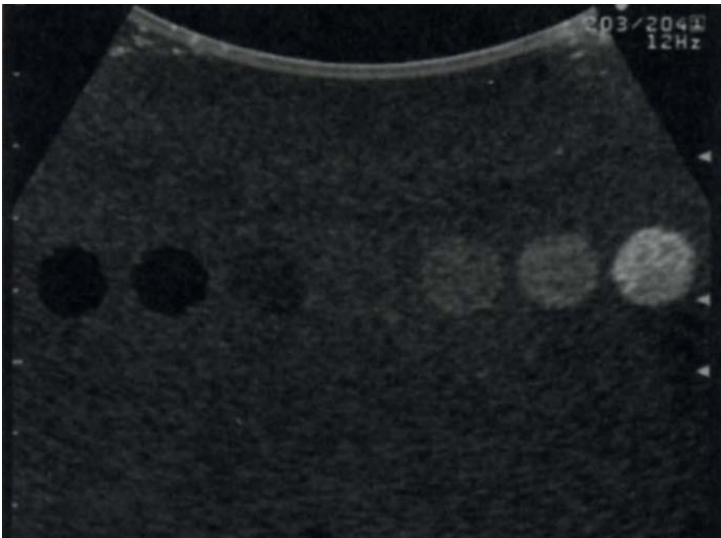
Target depth 20mm

Target diameter 10mm

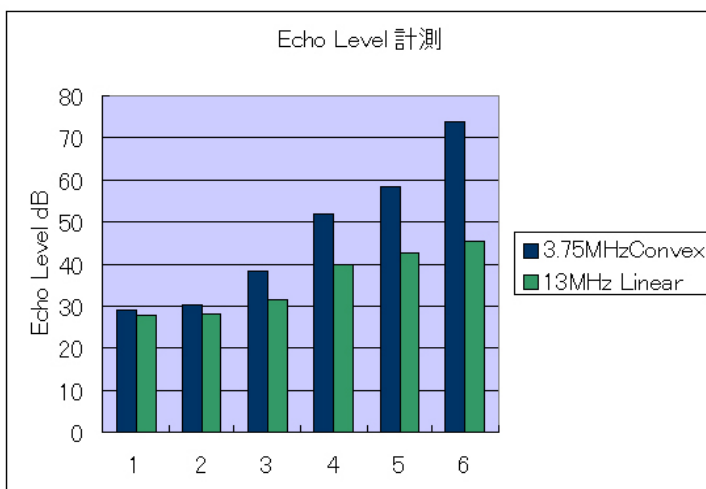
Spaces between targets :

12.5 mm

Echogenicity: 7 steps



Convex Probe Image



Example

A graph created by histogram function of an instrument.



# Quality Control with N-365

- Before you start your periodic checking, wait more than 15 minutes after turning on the main power to your ultrasound scanner.
- Ensure to scan the phantom always at the same phantom temperature shown on the thermo mentor on the phantom wall, since the speed of the sound may depend on the temperature; the higher the temperatures, the slower the speed of sound.

To stabilize the temperature, it is recommended to keep the phantom under the room temperature same as where your going to perform the QC procedures for more than 6 hours before scanning.

- Ensure to hold you probe completely straight and vertically against the targets you intend to scan.

Record the image when the targets shown the smallest, or you recognize the highest resolution).

- At the time of your first checking, find the optimal gain so that all gray scales targets can be shown clearly and record the setting. Then use this gain for all other targets and use the same setting for your second periodic checking and after.
- To monitor the change of device across the ages, compare the latest date with the first time checking data created with the same setting and procedures.

# Ultrasound QA phantom N-365

## Multipurpose phantom

### Specifications

- Speed of sound 1440m/sec (25 degrees C)
- Attenuation rate 0.57dB/cmMHZ
- Phantom size 190 × 220 × 70mm

#### ■ Axial resolution, angular resolution

Depth at 15, 30, 50mm

Target diameter 0.05mm

Spaces between targets 0.5, 1, 2, 3mm

#### ■ Close range resolution

Depth range of 1–10 mm depth

(10 targets are embedded)

Target diameter 0.1mm

Spaces between targets :5 mm

#### ■ String targets

Target diameter: 0.1mm

Target depths: from 10 to 200mm

Spaces between targets: 10mm

Horizontal spaces between targets: 1, 2, 3, 4, 5, 10mm

#### ■ Cyst targets

Target diameters: 1, 2, 3, 4mm

Axial spaces between targets :10, 30, 50, 70, 100, 150mm

#### ■ Gray scale

Target depth 20mm

Target diameter 10mm

Spaces between targets :12.5 mm

Echogenicity: 7 steps