

KS215T-2 Ultrasound Elasticity Tissue-like Model

Basic structure:

- (1) The side and bottom plates of the phantom shell are both 10mm thick organic glass, and the top surface is covered with a composite film sound window;
- (2) Two circular holes with a diameter of 36mm are opened on the bottom plate, and the openings are sealed with high-quality rubber to facilitate liquid injection maintenance;
- (3) The size of the background material is: 180mm in length, 130mm in width, and 120mm in height (depth);
- (4) There are a total of 4 target markers, all of which are cylindrical, with a diameter of $\Phi 12\text{mm}$;
- (5) The axes of the target markers are parallel to each other, and the spacing between adjacent target axes is 34mm. The starting target axis is 50mm away from the edge of the phantom shell;
- (6) The axes of the target markers form a 45° angle with the surface of the sound window, so that the depth where they are located continuously changes.

Acoustic-mechanical properties of the background and target materials

- (1) Background and target materials, the longitudinal wave velocity at 23°C is (1540 ± 10) m/s for both;
- (2) Background and target materials, the slope of the longitudinal wave attenuation coefficient at 23°C is (0.5 ± 0.05) dB/(cm MHz) for both;
- (3) Background material, the shear wave velocity at 23°C is 2.89 m/s $\pm 5\%$, and the Young's modulus is 25 kPa $\pm 10\%$;
- (4) For the 4 target materials, the shear wave velocities at 23°C are 1.63 m/s $\pm 5\%$, 2.16 m/s $\pm 5\%$, 3.87 m/s $\pm 5\%$, and 5.16 m/s $\pm 5\%$, respectively; the Young's moduli are 8 kPa $\pm 10\%$, 14 kPa $\pm 10\%$, 45 kPa $\pm 10\%$, and 80 kPa $\pm 10\%$, respectively.

