

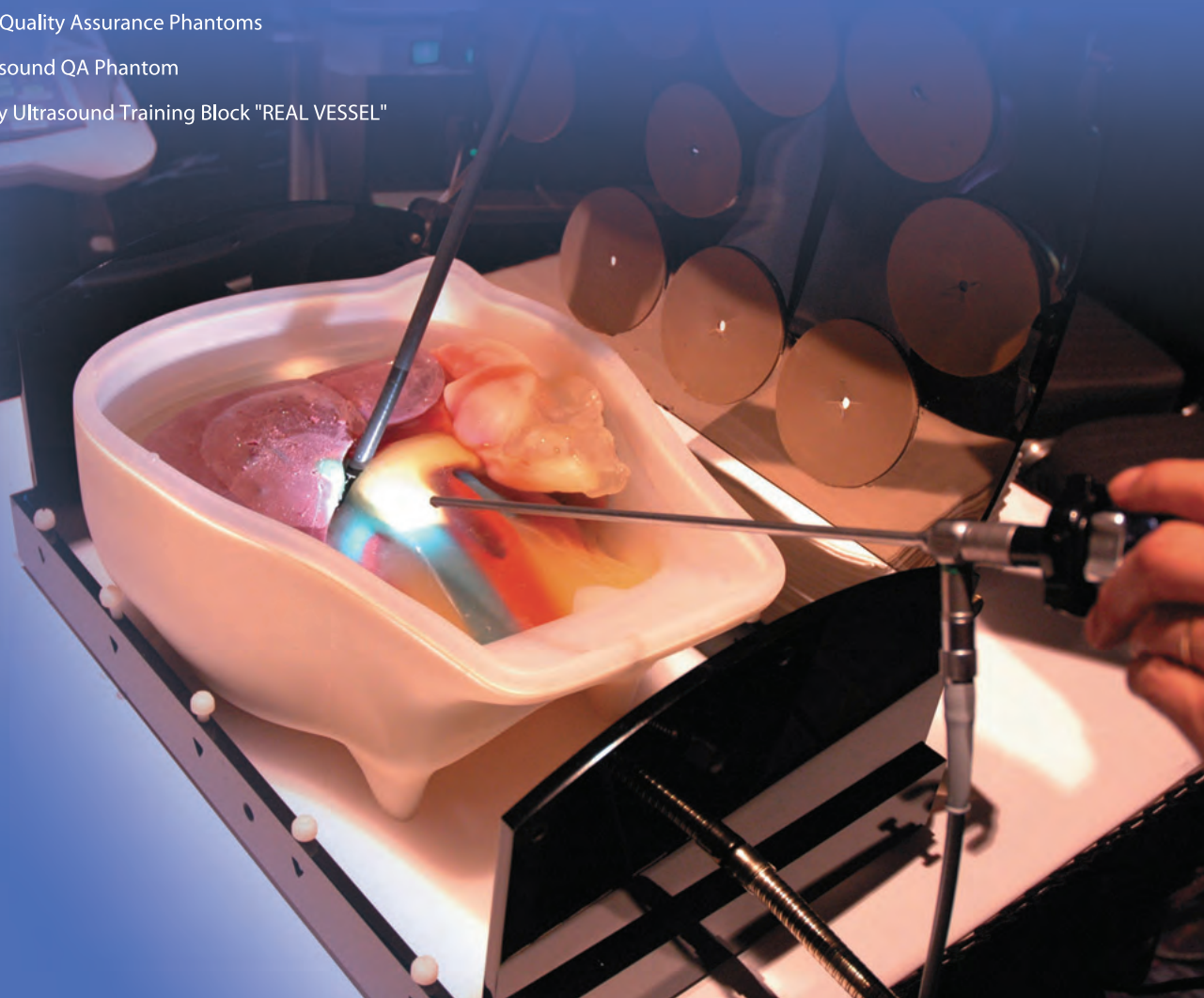
# Ultrasound Examination

KYOTO KAGAKU

## Phantoms & Training Models **vol. 3**

Original phantom material, nonaqueous, stable, and long-life, with controllable echogenicities plus tradition of anatomical model makes unique KYOTOKAGAKU ultrasound phantoms which contribute to have larger benefits from this noninvasive approach to the human body.

- US-7 Fetus Ultrasound Examination Phantom "SPACE FAN-ST" **New**
- US-6 Breast Ultrasound Examination Phantom "BREAST FAN" **New**
- US-5 FAST/Acute Abdomen Phantom "FAST/ER FAN" **Improved**
- US-1B Ultrasound Examination Training Phantom "ABDFAN"
- US-1 Ultrasound Examination Training Phantom "ECHOZY"
- M98 Internal Organ Anatomical Model "ECHO-ZOU"
- US-3 Abdominal Intraoperative & Laparoscopic Ultrasound Phantom "IOUSFAN"
- US-2 Ultrasound Quality Assurance Phantoms
- US-4 Breast Ultrasound QA Phantom
- 11347-210 Introductory Ultrasound Training Block "REAL VESSEL"



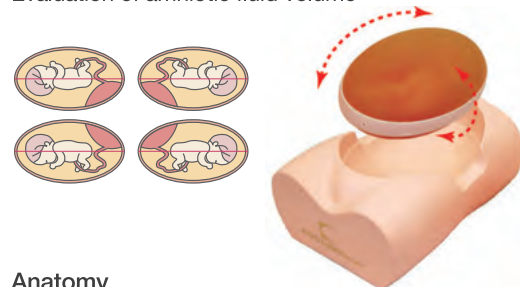
# Fetus Ultrasound Examination Phantom "SPACE FAN-ST"

The SPACEFAN-ST provides high quality training for routine second trimester screening. This phantom contains a 23 week fetus with full anatomy placed in the uterus that can be scanned with 2D and 3D transducers. The oval shape phantom abdomen can be set in four different positions to enrich the training variation. Included life-size fetus model facilitates demonstration and three dimensional understanding.



## Training Items:

Fetal size assessment: BPD, AD, AC and FL  
 Confirmation of normal fetus situs  
 Fetal anatomy assessment:  
   head and brain, heart and lung, abdominal organs, spine and bones.  
 Placental localization  
 Evaluation of amniotic fluid volume



## Anatomy

Uterus: amniotic fluid, placenta, umbilical cord, and a 23 week fetus (26cm).

Fetus: skeletal structure, brain with septum lucidum, heart with four chambers, lungs, spleen, kidneys, aorta, UV, UA, and the external genital.

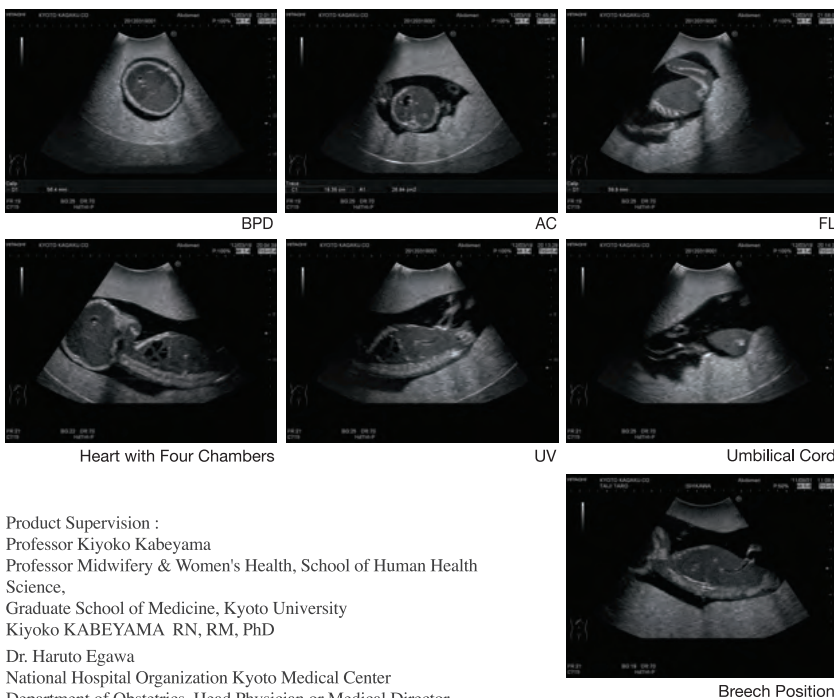
## Fetus Ultrasound Examination Phantom US 7

### Set includes:

- 1 mother body torso
- 1 ultrasound pregnant uterus phantom
- 1 fetus demonstration model
- 1 carrying bag

phantom size: approx, 40 x 29 x 22cm  
 weight: approx, 6kg

Specifications are subject to change.



Product Supervision :  
 Professor Kiyoko Kabeyama  
 Professor Midwifery & Women's Health, School of Human Health Science,  
 Graduate School of Medicine, Kyoto University  
 Kiyoko KABEYAMA RN, RM, PhD  
 Dr. Haruto Egawa  
 National Hospital Organization Kyoto Medical Center  
 Department of Obstetrics, Head Physician or Medical Director

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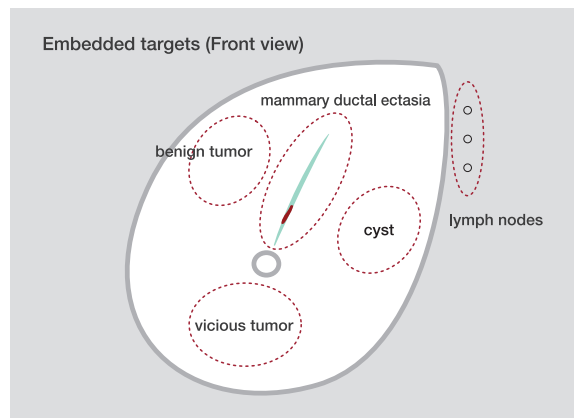
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# Breast Ultrasound Examination Phantom "BREAST FAN"

The BREASTFAN is a unique phantom for training in basic breast ultrasound examination.

Simulated targets with different echogenicities are embedded in the phantom mammary gland.

In this phantom you may visualize the following: the subcutaneous adipose, the mammary gland, the galactophore, Cooper's ligament, the retromammary adipose, the costae, the clavicle, the pectoralis major, the lung, and the lymph nodes at axilla.

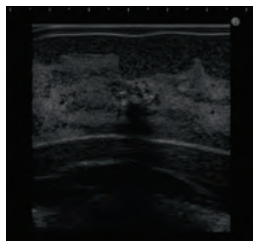


#### Set includes:

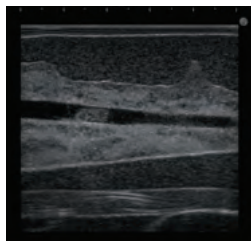
- 1 Breast phantom
- 1 carrying case
- 1 tutorial manual (DVD)

#### phantom size:

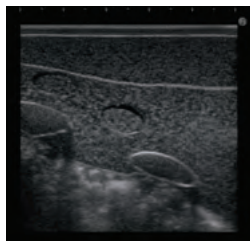
- approx, 19 x 22 x 7 Hcm, 3.6kg
- packing size:
- approx, 35 x 36 x 24 Hcm, 6kg



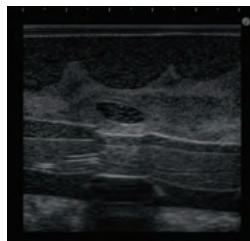
Vicious Tumor



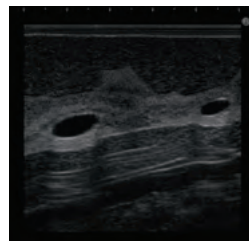
Mammary Ductal Ectasia



Lymph Nodes



Benign Tumor



Cyst

Featured Products Coming Soon...

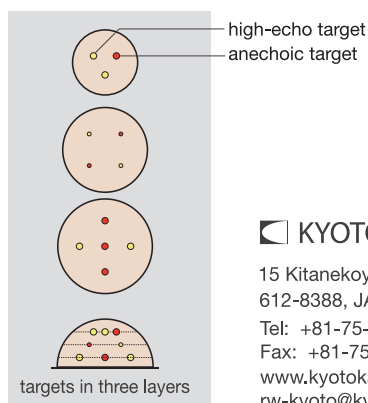
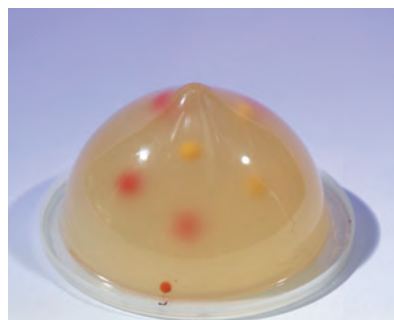
## Biopsy Training Model

Ultrasound Guided Needle Biopsy

We would like to introduce to you our new training phantom for ultrasound guided breast biopsy.

Simulated lumps with different echogenicities can be aspirated by biopsy needles.

This model provides a combination of hands-on and visual training. This phantom is fantastic training for the usage of the scanner and needle. The image is excellent quality.



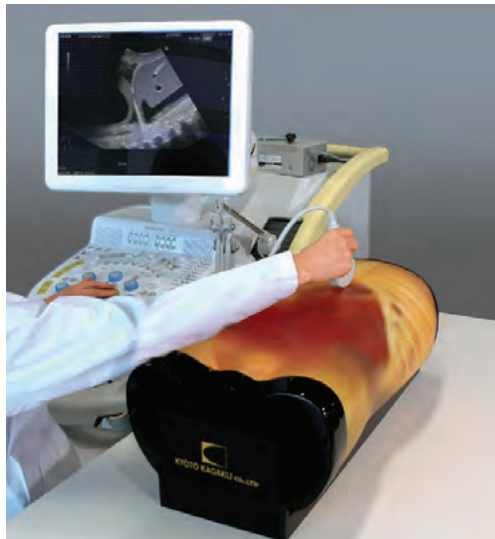
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# FAST/Acute Abdomen Phantom "FAST/ER FAN"

The phantom has been developed to provide simulated training in FAST (Focused Assessment with Sonography for Trauma); an ultrasound examination directed at identifying the presence of free intraperitoneal or pericardial fluid in the traumatic patients, which allows detecting the possible cause of shocks such as mass hemothorax, intraperitoneal hemorrhage or cardiac tamponade.



Production supervision:  
Junji Machi, MD, PhD  
University of Hawaii at Manoa and Kuakini Medical Center

*An innovative phantom for repetitive training of FAST as an adjunct to the ATLS primary survey.*



## Training items:

Internal hemorrhage at perihepatic, perisplenic, pelvis and pericardium area.

Sonography for acute patients:

Internal hemorrhage at pericardial, bilateral chambers as well as intra-abdominal hemorrhage around the liver, the spleen and the urinary bladder.

Pathologies including cholecystitis, an aortic aneurysm, a lesion on the colon.



① Cardiac Tamponade



② Right Upper Abdominal Bleeding



③ Left Upper Abdominal Bleeding



④ Pelvic Bleeding



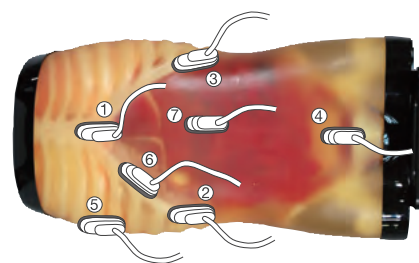
⑤ Pleural Bleeding



⑥ Peri-hepatic Bleeding

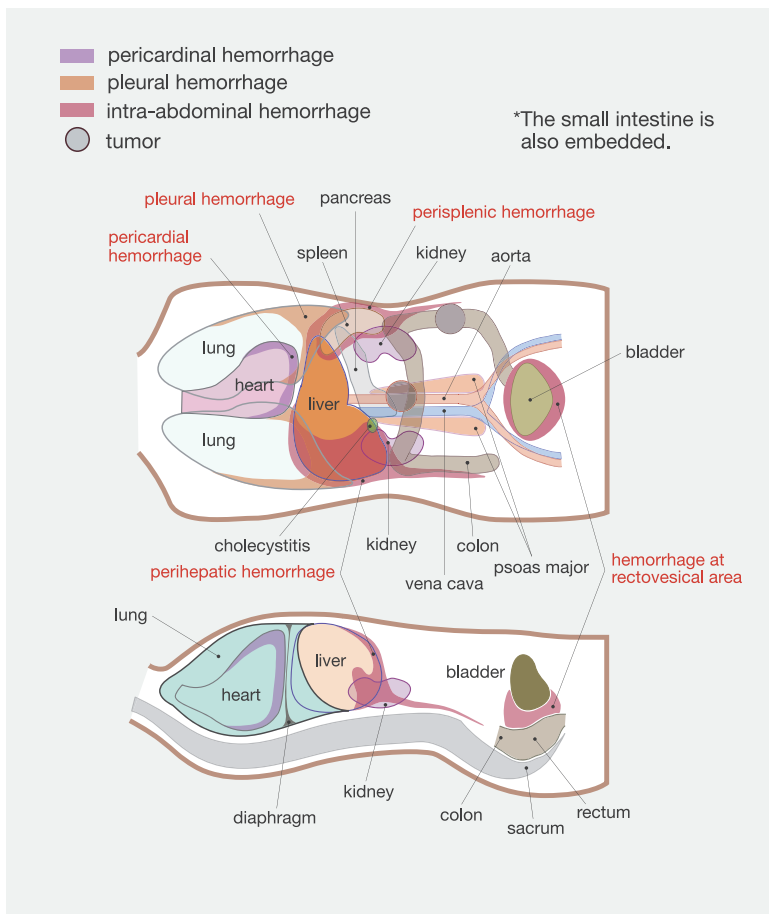


⑦ Abdominal Aortic Aneurysm



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## FAST/Acute Abdomen Phantom "FAST/ER FAN" US 6

### Set includes:

- 1 ultrasound phantom with carrying base
- 1 tutorial manual (DVD)

### Materials:

soft tissue and organs: urethane base resin  
synthetic bones: epoxy base resin  
size: approx. 61 x 30 x 30 cm  
weight: approx. 31 kg

Specifications are subject to change.



Featured Products Coming Soon...

## Pediatric FAST/Acute Abdomen Phantom

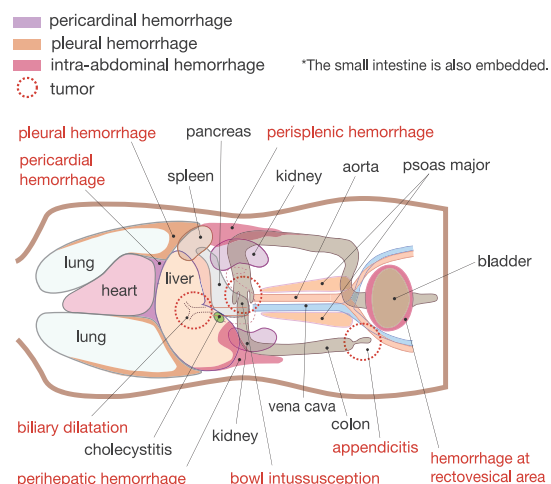
A two years old anatomical phantom with full organs and bones for FAST/Acute sonography training.



Appendicitis

Bowl Intussusception

Biliary Dilatation



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# Ultrasound Examination Training Phantom "ABDFAN"

Japanese Patent No. 3650096

Unique high-fidelity ultrasound phantom facilitates effective training in abdominal ultrasound scanning with your own clinical devices. Simulated lesions embedded as targets provide wider educational opportunities.



Production supervision:  
Junji Machi, MD, PhD  
University of Hawaii at Manoa and Kuakini Medical Center



Inanimate tool for training of a novice as well as for demonstration by an expert.

Any ultrasound device with a convex probe can be used for the phantom.

Detailed hepatobiliary, pancreatic and other abdominal anatomy meeting requirements for excellent training; eight Couinaud's hepatic segments can be localized.

Various simulated lesions including biliary stones and cysts, solid tumors (hypoechoic, hyperechoic and target-appearance) in the liver, pancreas, spleen and kidneys.

Near real-size organs, structures and abnormal lesions.

Durable long-life phantom materials.

Tutorial Manual (DVD)



 KYOTO KAGAKU

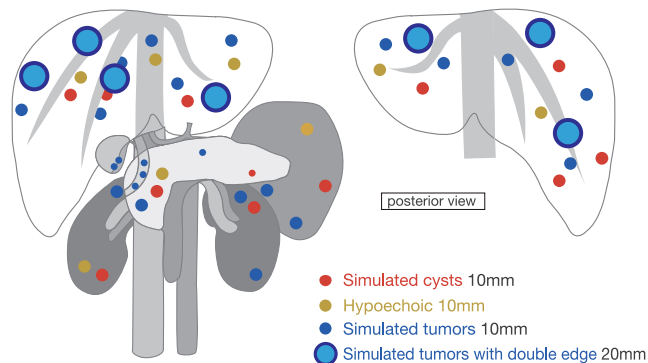
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Four variations of simulated lesions enrich the training application.

## Pathologies:

hepatic lesions (cystic and solid), gallbladder and bile duct stones, pancreatic tumors (one invading the portal vein), splenic lesions, both kidney lesions, and left adrenal tumor.

Simulated lesions in liver, pancreas, kidney, spleen, gallbladder



## Anatomies:

the liver  
(segmental anatomy, portal and hepatic venous systems, ligamentum teres and ligamentum venosum),  
biliary tract  
(gallbladder, cystic duct, intrahepatic and extrahepatic bile ducts),  
pancreas  
(pancreatic duct),

spleen,  
kidneys,  
detailed vascular structures  
(aorta, vena cava, celiac artery and its branches, portal vein and its branches, superior mesenteric vessels, renal vessels, etc)



Fully three dimensional approach

Midsagittal Plane



Right Costal Interspace Section



Left Costal Interspace Section



Axial Section



Right Costal Section

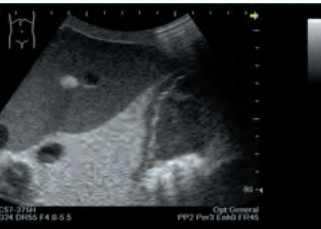


Approachable from All Surface



Detailed anatomy with approximate-to-human echogenicities.

Organs are based on cadaver mold and then modeled to realize right anatomy under ultrasound scanning. The phantom posture is designed to make the depth of the organs from the probe close to clinical setting. Echo-Zou, a disassemblable anatomical model for the relevant organs facilitates three dimensional understanding of sectional images.



Hyperechoic, Anechoic Targets



Hypoechoic Targets



Gallstone



Pancreas



Double, Hypoechoic Targets



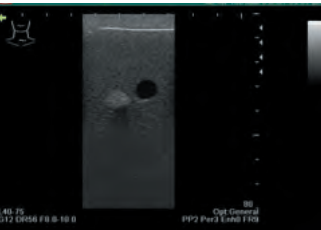
Double, Hyperechoic Targets



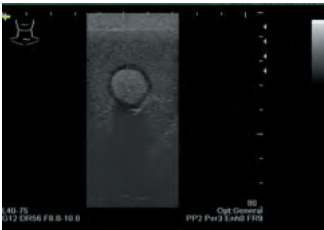
Pancreas



Pancreas



Hyperechoic, Anechoic Targets



Double Targets



Liver, Hepatic Vein



Liver, Portal Vein

## Ultrasound Examination Training Phantom "ECHOZY"

Ultrasound Training Phantom with no pathology

Upper abdomen organs with approximate-to-human echogenicities.  
State-of-art anatomy fulfils medical sonographers' high requirements.  
Unique long-life phantom materials.



Production supervision:

Dr. Hitoshi Asai, Director  
Osaka Kyoiku University, Health  
Administration Center

Dr. Shigeru Nakamura  
Nagayoshi General Hospital, Clinical  
Examination Department



### Training items

Instrumentation and probe manipulation

Basics of abdominal sonography:

Cross sections and sonographic anatomy  
Sonographic demonstration of each individual organ  
Localization of hepatic Couinaud's segments

M 98

## Internal Organ Anatomical Model "ECHO-ZOU"

Separates into 20 parts:

1. Hepatic segment
2. Hepatic segment
3. Hepatic segment
4. Hepatic segment
5. Hepatic segment
6. Hepatic segment
7. Hepatic segment
8. Hepatic segment
9. Portal vein, Bile duct and Hepatic vein
10. Gallbladder
11. Pancreas
12. Spleen
13. Right kidney
14. Left kidney
15. Abdominal aorta
16. Inferior vena cava
17. Hepatic veins
18. Spinal column
19. Stomach
20. Large intestine, Small intestine













## Ultrasound Examination Training Model

### Set variations:

\*please quote the eight digit product number when you place orders.

<b>US-1B</b>	<b>41900-030</b>	<b>"ABDFAN"</b>		
1 ultrasound phantom "ABDFAN" 1 set of positioning pillows 1 tutorial Manual (DVD) 1 carrying case  phantom size: approx.18 x 25 x 28H cm,12 kg packing size: approx.30 x 70 x 50H cm,17 kg			 	
<b>US-1B</b>	<b>41900-100</b>	<b>"ABDFAN" Full Set</b>		
1 ultrasound phantom "ABDFAN" 1 anatomical model "ECHO-ZOU" 1 set of positioning pillows 1 tutorial Manual (DVD) 1 carrying case  phantom size: approx.18 x 25 x 28H cm,12 kg ECHO-ZOU size: approx.16 x 23 x 16H cm, 2.9 kg packing size: approx.30 x 70 x 50H cm,17 kg			  	
<b>US-1</b>	<b>41900-010</b>	<b>"ECHOZY"</b>		
1 ultrasound phantom "ECHOZY" 1 set of positioning pillows 1 carrying case  phantom size: approx.18 x 25 x 28H cm,12 kg packing size: approx.30 x 70 x 50H cm,17 kg				
<b>US-1</b>	<b>41900-000</b>	<b>"ECHOZY" Full Set</b>		
1 ultrasound phantom "ECHOZY" 1 anatomical model "ECHO-ZOU" 1 set of positioning pillows 1 carrying case  phantom size: approx.18 x 25 x 28H cm,12 kg ECHO-ZOU size: approx.16 x 23 x 16H cm, 2.9 kg packing size: approx.30 x 70 x 50H cm,17 kg			 	

#### Materials:

ultrasound phantom: Urethane elastomer

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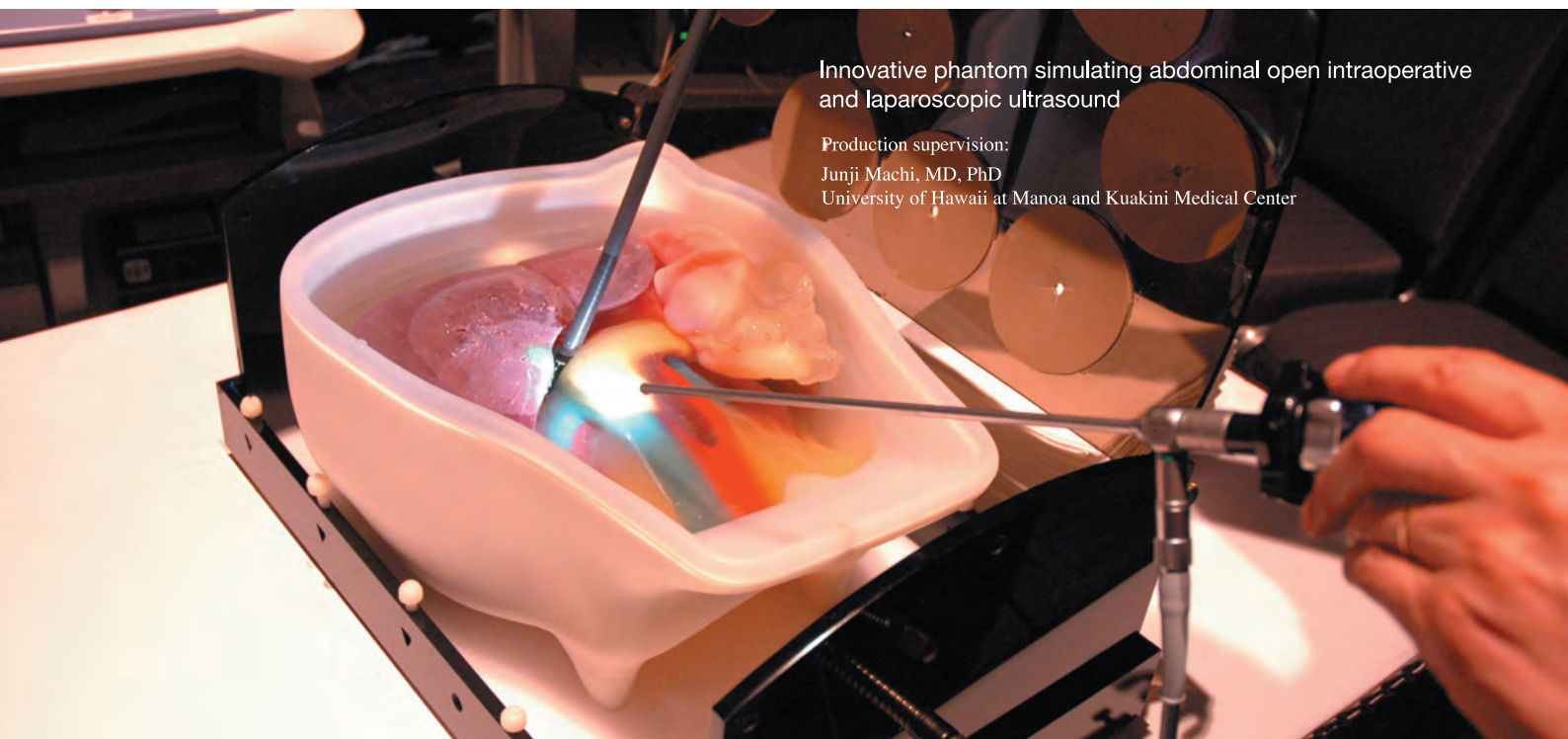
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# Abdominal Intraoperative & Laparoscopic Ultrasound Phantom

## "IOUSFAN"

Japanese Patent No. 3650096



Innovative phantom simulating abdominal open intraoperative and laparoscopic ultrasound

Production supervision:

Junji Machi, MD, PhD

University of Hawaii at Manoa and Kuakini Medical Center

Inanimate tool for training of a novice as well as demonstration by an expert.

Detailed hepatobiliary, pancreatic and other abdominal anatomy meeting requirement for excellent training: open intraoperative scanning of the liver, biliary tract, pancreas; laparoscopic examination of the biliary system for screening of stones and evaluation of hepatic and pancreatic lesions, etc.

Soft phantom materials allowing realistic probe manipulation.

Various simulated lesions including biliary stones and cysts, solid tumors (hypoechoic, hyperechoic and target-appearance) in the liver, pancreas, spleen and kidneys.

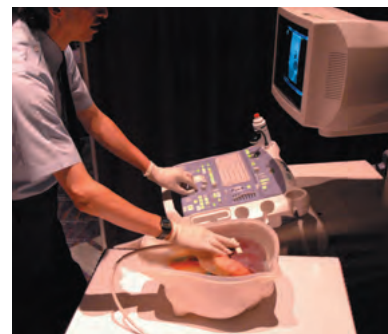
Detachable stomach and duodenum allowing various scanning methods of the bile duct and pancreas.

Container allowing water-immersion scanning for both contact and stand-off techniques, simulating real abdominal intraoperative and laparoscopic scanning. (No ultrasound gel required)

Near real-size organs, structures and abnormal lesions.

Container with phantom parts in the laparoscopic trainer box so that laparoscopic ultrasound of organs is possible under direct laparoscopic view.

Durable long-life phantom materials.

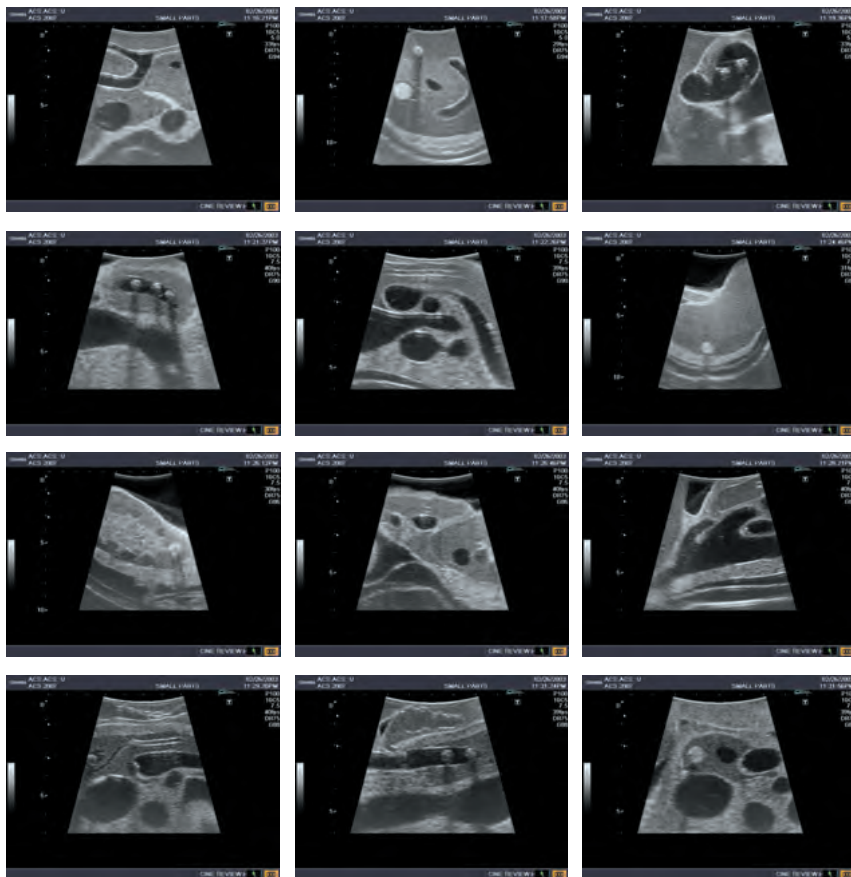


Intraoperative Ultrasound (open surgery)



Laparoscopic Ultrasound

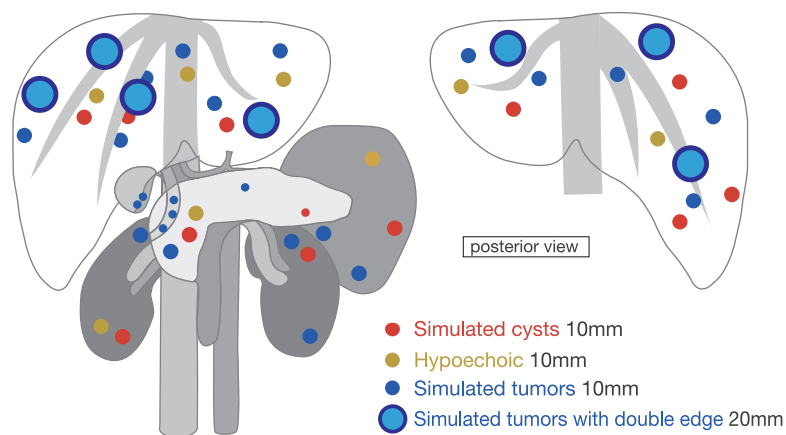
## Ultrasound Images



## Pathologies:

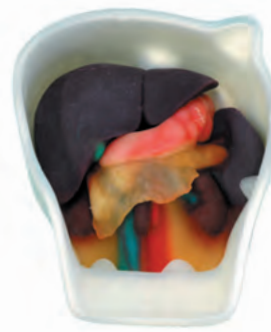
hepatic lesions (cystic and solid), gallbladder and bile duct stones, pancreatic tumors (one invading the portal vein), splenic lesions, both kidney lesions, and left adrenal tumor.

### Simulated lesions in liver, pancreas, kidneys, spleen, gallbladder



## Anatomies:

the liver  
(segmental anatomy, portal and hepatic venous systems, ligamentum teres and ligamentum venosum),  
biliary tract  
(gallbladder, cystic duct, intrahepatic and extrahepatic bile ducts),  
pancreas  
(pancreatic duct),  
spleen,  
kidneys,  
detailed vascular structures  
(aorta, vena cava, celiac artery and its branches, portal vein and its branches, superior mesenteric vessels, renal vessels, etc)



Abdominal Intraoperative & Laparoscopic Ultrasound Phantom

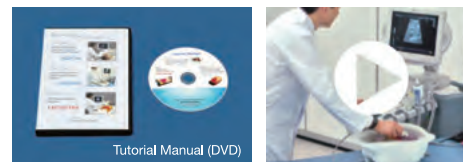
## "IOUSFAN" US-3

Set includes:

- 1 upper abdomen ultrasound phantom
- 1 stomach ultrasound phantom
- 1 phantom container
- 1 Tutorial Manual (DVD)

phantom size: approx. 30 x 38 x 17.5cm, wt. 5.8kg  
packing size: approx. 47 x 42 x 25cm, wt. 9kg

Specifications are subject to change.



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# Ultrasound Quality Assurance Phantoms

Japanese Patent No. 3650096

Production supervision: Hiroshi Natori, Ph.D Professor Sapporo Medical University



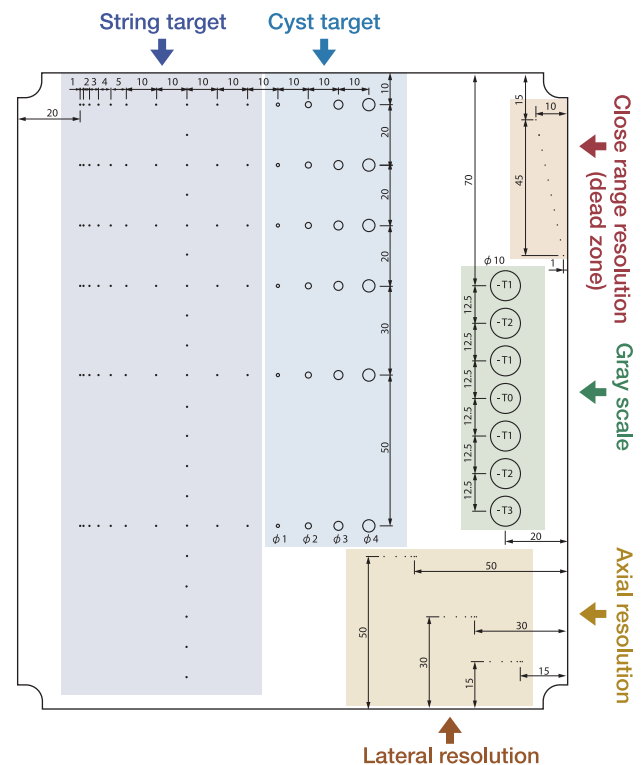
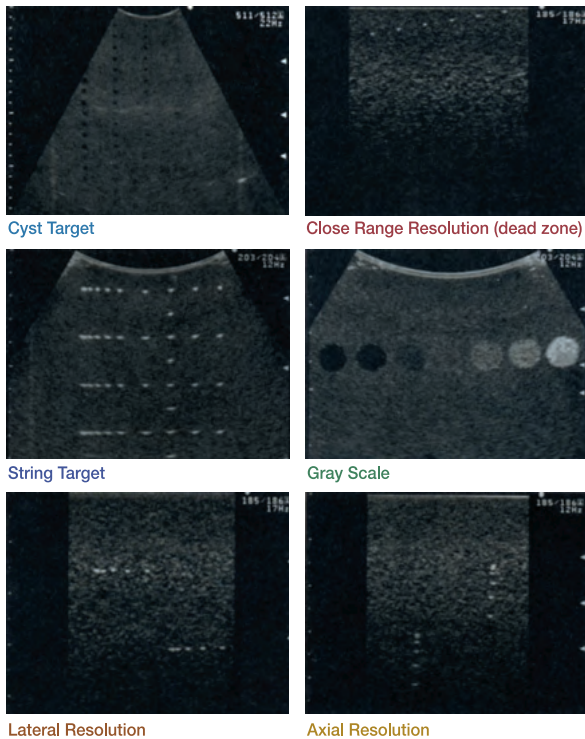
Durable and stable, KYOTO KAGAKU original phantom material does not change in property or in shape over times, allowing reliable periodical quality check always with the same phantom.

The phantom material also excels in its homogeneous granular background refection.

## N-365 Multipurpose Phantom

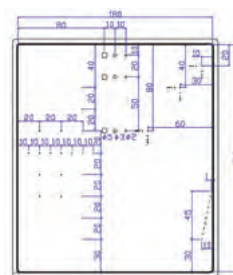
Useful both for daily assessment and further research. Gray scale for contrast evaluation, cyst targets with non-resonance cylinders, line targets for geometrical evaluation, close range (dead zone) resolutions, axial and lateral resolutions are prepared for scanning.

The phantom is designed to allow scanning from all four side walls.

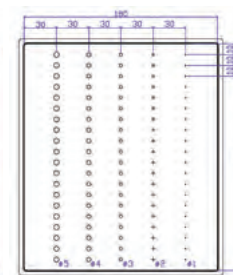


varieties:

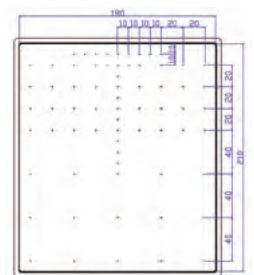
### N-060 QA Phantom



### N-255 Cyst Phantom



## N-211 String Phantom



**Set includes:**

- 1 phantom each  
1 carrying case each  
phantom size:  
19 x 22 x 7cm, 3.6kg  
packing size:  
35 x 36 x 24cm, 6kg

Common specifications:

material: Urethane elastomer, acryl, nylon  
Sonic velocity: 1440 m/sec at 25 degrees C  
attenuation rate:  
0.57 dB/cm MHz at 25 degree C  
acoustic impedance: 1.38 Rayl at 25 degree C

Specifications are subject to change.



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# Breast Ultrasound QA Phantom

Recommended by Japan Association of Breast and Thyroid Sonology



Ultrasound QA phantom for high precision imaging in the high frequency sonography around 10MHz required in breast examination.

For monthly basic quality check of ultrasound images, as well as longer term quality assurance to maintain consistency of the performance of scanners and transducers.

## Features:

Four kinds of targets, gray scale, cyst targets, dot targets and 45 degrees line target at 2 depth, 10mm and 20mm.

Back ground of each phantom block is of different attenuation rate and speed of sound.

Detailed spatial resolution as minute as 0.5mm can be assessed.

Stable and durable nonaqueous phantom materials.

\*Japanese patent No.3650096

Comes with a thermometer to measure inner temperature of the phantom.

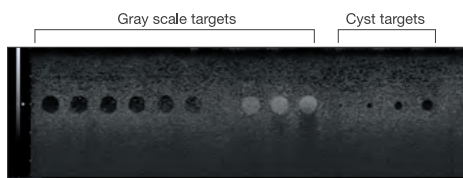
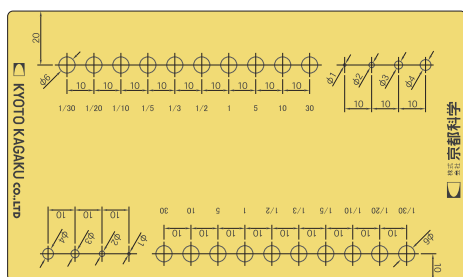
Product supervision:

Japan Association of Breast and Thyroid Sonology,  
Quality Assurance Committee Working Team.

Recommendation from:

Japan Radiology Society, Imaging Committee  
Breast Imaging Group

## Mass targets block (contrast resolution)



### Gray scale targets

10 step gray scale targets.

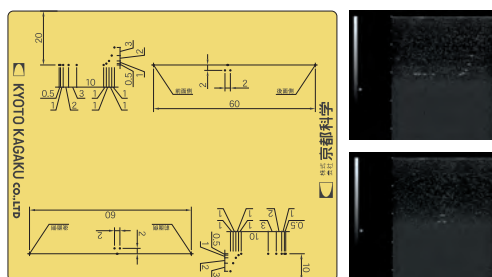
Find the optimal gain to visualize all targets clearly and with even change in echogenicities. Then keep the gain for subsequence assessment session.

### Cyst targets

4 targets with different diameter from 1mm(0.04 in) to 4mm(0.16 in).

Visualize the four targets as clear as possible. Then check their roundness and if the 1mm(0.04 in) dia. target can be properly recognized.

## Dot targets block (spatial resolution)



### Dot targets

Dot targets for horizontal and vertical resolution. Spacing from 0.5mm to 3mm.

### 45 degrees line target

Influence on the image quality by the slice thickness can be assessed.

Consists of two dot targets with 2 mm distance with a line target embedded horizontally with 45 degrees from the front wall to the back wall.

## Set includes:

- 1 mass targets block
- 1 dot targets block
- 1 thermometer
- 1 storage case



mass targets block phantom size:

180 x 75 x 110mm, 1.3kg

dot targets block phantom size:

135 x 75 x 110mm, 1.0kg

Specifications are subject to change.

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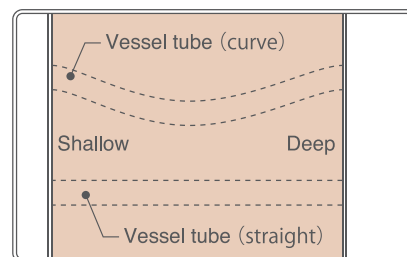
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# Introductory Ultrasound Training Block "REAL VESSEL"



*The training block facilitates training in basics of ultrasound-guided punctures, before moving onto trainings with the anatomical type ultrasound pad.*



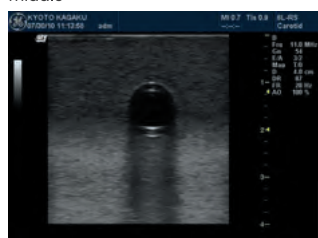
Vessel Tube (straight)



deep



middle



shallow

Vessel Tube (curve)



## Features:

Visualization and localization of the vessels.  
Probe manipulation.  
Basics for ultrasound-guided vessel access.

## Training items:

2 simulated vessel lines: straight and curving.  
Lines have slope represent vessels with different depth.  
Vessel wall yields under pressure of a needle tip.

11347-210

REAL VESSEL Introductory ultrasound training block  
(a set of 2)

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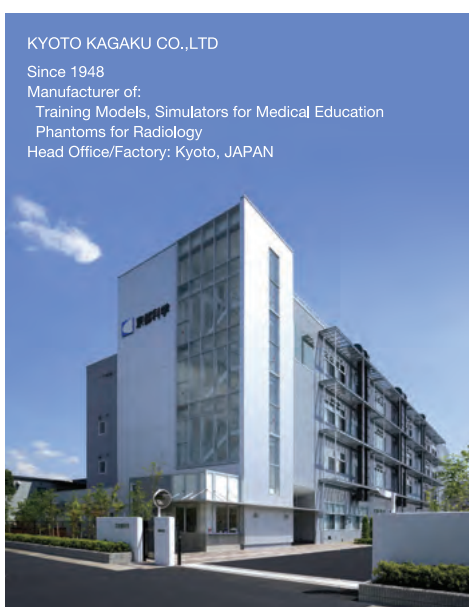
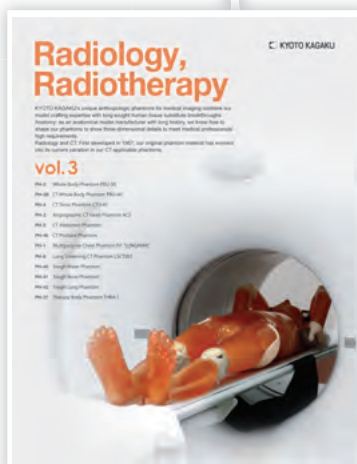
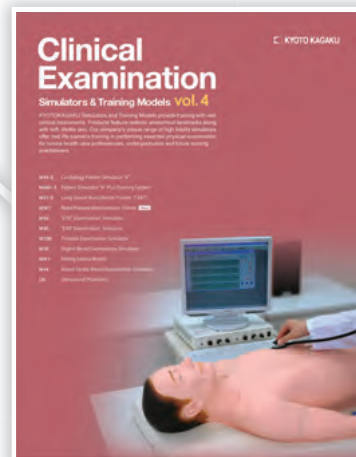


**We Are Here!**

## Have You Found What You Are Looking For ?

We have pride in offering a wide variety of high quality models, simulators and phantoms.

Current brochure; **Ultrasound Examination**.  
Please take a look at our other product brochures from KYOTO KAGAKU.



KYOTO KAGAKU CO.,LTD

Since 1948

Manufacturer of:

Training Models, Simulators for Medical Education  
Phantoms for Radiology

Head Office/Factory: Kyoto, JAPAN

From the city of 1200 years

**KYOTO KAGAKU: History and Innovation**

Kyoto Kagaku was founded in post-war Japan in 1948, originating from the Shimadzu Corporation, founded by Genzo Shimadzu Sr. in 1875 of the Meiji Period (1868-1912).

Since then Kyoto Kagaku was developed along with Japan's modernization. To meet the urgent need for educational materials, we have been creating unique models and specimens. We believe that the essential principle is to make knowledge visible and tangible. In 1930 our first manikin with synthetic materials was created. Then our products have become well known, contributing to improvements in education, academic and industrial research.

Today, our activities are widely involved in the field of education for medical and healthcare professionals. Ranging from nurses and caregivers, physicians and surgeons, radiographers and sonographers, patients and students, also including residents to doctors in practice.

In order to keep serving education for the coming future generations, KYOTO KAGAKU continuously seek for innovation, holding high standards for quality. Our first radiography phantom was made in the 1960's. Ultrasound training phantoms for diagnostic or invasive procedures are now rapidly developing.

Worldwide Inquiries & Ordering

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