

# Ultrasound Phantoms

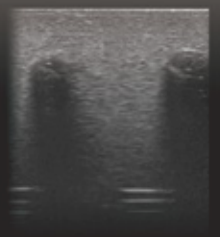
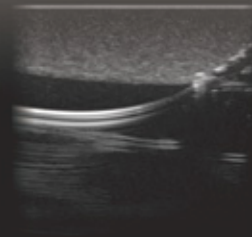
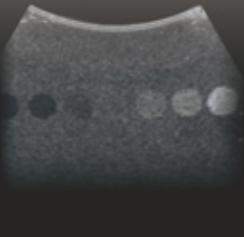


KKAmerica



KYOTO KAGAKU

Ver.2



# For optimal application of ultrasound in medicine

Kyoto Kagaku started preparing for coming age of medical ultrasound as early as turning of the century. At the beginning, there was two streams to pursuit: development of material for ultrasound phantom that is not only close to human tissue under ultrasound but also stable and long-life, construction of three-dimensional anatomical representation that facilitate improving interpretation skills of trainees. With the passage of time, application of ultrasound in medicine has developed and also the phantoms. Now Kyoto Kagaku phantoms cover the field of QA, training in examination and ultrasound guided procedures, and serving the range of health care specialties.



Photos courtesy of Adventist University of Health Sciences

Our ultrasound phantoms are presented at exhibitions such as RSNA, ECR, AIUM, SDMS and IMSH.

For the latest information please visit:

 **KYOTO KAGAKU co.,LTD**

**Product Lineup Website** [www.kyotokagaku.com/lineup/](http://www.kyotokagaku.com/lineup/)

**Corporate Website** [www.kyotokagaku.com](http://www.kyotokagaku.com)

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**US-1B**  
Abdominal Ultrasound  
Examination Phantom  
with Pathologies "ABDFAN"

>>P.01



**US-1**  
Abdominal Ultrasound  
Examination Phantom  
"ECHOZY"

>>P.01



**US-5**  
FAST/Acute  
Abdomen Phantom  
"FAST/ER FAN"

>>P.02



**US-8**  
Pediatric FAST/Acute  
Abdomen Phantom

>>P.02



**US-14a**  
Ultrasound Neonatal  
Head Phantom  
Normal Type

>>P.03



**US-14b**  
Ultrasound Neonatal  
Head Phantom  
Abnormal Type

>>P.03



**US-7a**  
Fetus Ultrasound  
Examination Phantom  
"SPACE FAN-ST"

>>P.04



**US-6**  
Breast Ultrasound  
Examination Phantom  
"BREASTFAN"

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**US-10**  
Female Pelvic  
Ultrasound Phantom

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**US-11**  
Scrotal Ultrasound  
Phantom

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**US-16**   
Intravesical Urine Volume  
Measurement Phantom

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**US-13**  
Infant Hip  
Sonography Phantom

>>P.06



**US-17**   
Rheumatoid Hand  
Phantom

>>P.07



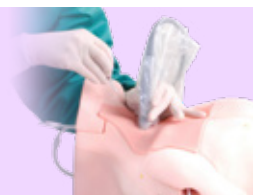
**US-3**  
Abdominal Intraoperative &  
Laparoscopic Ultrasound  
Phantom "IOUSFAN"

>>P.07



**M93UB**  
CVC Insertion  
Simulator II

>>P.08



**M93C**  
CVC Insertion Simulator III

>>P.08



**11347-210**  
Introductory Ultrasound  
Training Block  
"REAL VESSEL"

>>P.08



**MW18**  
Ultrasound-Guided  
PICC Training  
Simulator

>>P.09



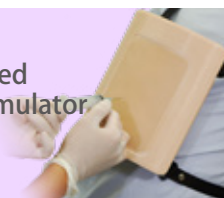
**MW4**  
Ultrasound-Guided  
Thoracentesis Simulator

>>P.09



**MW4A**  
Ultrasound-Guided  
Thoracentesis Simulator  
-Strap-on type-

>>P.09



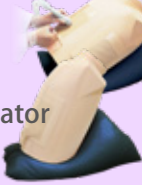
**MW15**  
Ultrasound-Guided  
Pericardiocentesis  
Simulator

>>P.09



**MW7**  
Ultrasound-Guided  
Thoracentesis/  
Pericardiocentesis Simulator  
-Full set-

>>P.09



**M43E**  
Ultrasound Compatible  
Lumbar Puncture/Epidural  
Simulator

>>P.10



**US-9**  
Ultrasound Guided  
Breast Biopsy Phantom

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**US-2**  
Ultrasound Quality  
Assurance Phantom

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**US-4**  
Breast Ultrasound  
QA Phantom

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Features of Ultrasound  
Phantom Materials

>>P.12

**US-1B** Abdominal Ultrasound Examination Phantom with Pathologies "ABDFAN"

**US-1** Abdominal Ultrasound Examination Phantom "ECHOZY"



**ABDFAN**

**Abdominal ultrasound phantom with pathologies**



**ECHOZY**

**Abdominal ultrasound phantom without pathology**

Unique high-fidelity ultrasound phantoms that facilitate effective training in abdominal ultrasound scanning with your own clinical devices.

**Features**

1. Detailed hepatobiliary, pancreatic and other abdominal anatomy
2. Eight Couinaud's hepatic segments can be localized.
3. ABDFAN has various simulated lesions to offer different variety of training options.

**Training Skills**

- Basics of abdominal sonography:
  - Cross sections and sonographic anatomy
  - Sonographic demonstration of each individual organ
  - Localization of hepatic Couinaud's segments

**Pathologies (ABDFAN only)**

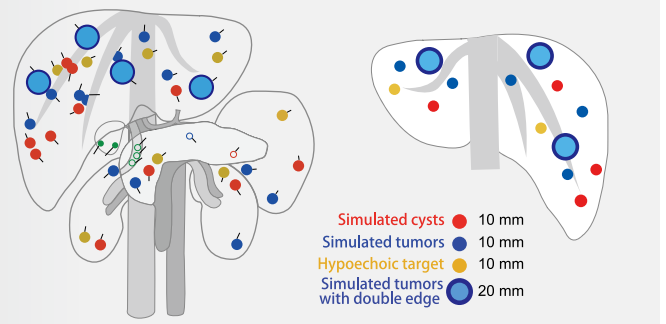
- Hepatic lesions (cystic and solid)
- Gallbladder and bile duct stones
- Pancreatic tumors (one invading the portal vein)
- Splenic lesions
- Both kidney lesions
- Left adrenal tumor



**Anatomy**

- 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, and more.)

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



**Product Supervision**

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

**Product Supervision**

Dr. Hitoshi Asai, Director  
Osaka Kyoiku University, Health Administration Center  
Dr. Shigeru Nakamura  
Nagayoshi General Hospital, Clinical Examination Department

**Specifications :**

Set variations:			
US-1B (41900-030) "ABDFAN"	US-1B (41900-100) "ABDFAN" full set	US-1 (41900-010) "ECHOZY"	US-1 (41900-000) "ECHOZY" full set
1 ultrasound phantom "ABDFAN"	1 ultrasound phantom "ABDFAN"	1 ultrasound phantom "ECHOZY"	1 ultrasound phantom "ECHOZY"
1 set positioning pillows	1 anatomical model "ECHO-ZOU"	1 set positioning pillows	1 anatomical model "ECHO-ZOU"
1 tutorial manual (DVD)	1 set positioning pillows	1 storage case	1 set positioning pillows
1 storage case	1 tutorial manual (DVD)		1 storage case
Phantom Dimensions:			
9.8 x 7 x 11 in. / 25 x 18 x 28 cm			



Conduct "FAST" assessment to save a trauma patient!

Features

1. An innovative phantom for repetitive training of FAST as an adjunct to the ATLS primary survey
2. Pathologies include cholecystitis, an aortic aneurysm and a lesion on the colon

Training Skills

- Internal hemorrhage at perihepatic, perisplenic, pelvis and pericardium area
- Sonography for acute patients

Anatomy

pleural hemorrhage  
pericardial hemorrhage  
perisplenic hemorrhage  
diverticulitis  
inflammation of the gallbladder  
perihepatic hemorrhage  
aneurysm  
appendicitis  
hemorrhage at rectovesical area

Cardiac Tamponade  
Right Upper Abdominal Bleeding  
Aneurysm

pericardial hemorrhage  
pleural hemorrhage  
intra-abdominal hemorrhage  
tumor

\*The small intestine is also embedded.

Product Supervision  
Junji Machi, MD, PhD  
University of Hawaii at Manoa and Kuakini Medical Center

Specifications :

Set includes:	
1 ultrasound phantom with storage case	
1 tutorial manual (DVD)	
Phantom Dimensions:	
21 x 12 x 9 in. / 62 x 30 x 24 cm	



Ultrasound training for pediatric FAST procedures

Features

1. The phantom of 2-year-old, thoracoabdominal organs, a bone structure, free-fluid to learn FAST procedures and pathologies that are commonly seen in pediatrics.
2. With this phantom, trainees can acquire skills in basics of pediatric abdominal ultrasound as well as FAST/Acute sonography.

Training Skills

- FAST procedures: Internal hemorrhage at perihepatic, perisplenic, pelvis, and pericardium area
- Sonography for acute pediatric patient:  
Bowel intussusception, appendicitis and biliary dilatation

Anatomy

pleural hemorrhage  
pericardial hemorrhage  
perisplenic hemorrhage  
ureteral calculus  
hydronephrosis  
biliary dilatation  
cholecystitis  
perihepatic hemorrhage  
bowel intussusception  
appendicitis  
hemorrhage at rectovesical area  
pericardial hemorrhage

Pleural Hemorrhage  
Hydronephrosis  
Appendicitis

pericardial hemorrhage  
pleural hemorrhage  
intra-abdominal hemorrhage  
pathologies  
typical pediatric conditions

\*The small intestine is also embedded.

Product Supervision  
Shunsuke Nosaka, MD, PhD  
Director of Radiology  
National Medical Center for Children and Mothers

Specifications :

Set includes:		Phantom Dimensions:	
1 ultrasound phantom		16 x 6 x 6 in.	
1 storage case		41 x 15 x 15 cm	
1 tutorial manual (DVD)			

## Ultrasound Neonatal Head Phantom (Normal type)



### World's First Ultrasound Neonatal Head Phantom

Cranial or head ultrasound is one of the most difficult scanning skills, and trainees have few opportunities for training.

This head model features accurate depiction of newborn's cerebral anatomy, and facilitates realistic user experience with its life-like soft touch.

#### Training Skills

- Scanning of brain anatomy in Sagittal (Angled Parasagittal), Coronal and Transverse planes via any fontanel.
- Palpation of anterior, posterior and mastoid fontanels

#### Anatomy

- Skull
- Anterior fontanel
- Posterior fontanel
- Mastoid fontanel
- Cerebrum
- Cerebellum
- Septum lucidum
- Cingulate gyrus
- Choroid plexus
- Brain-stem
- Lateral ventricles
- Third ventricle
- Fourth ventricle

#### Product Supervision

Charlotte Henningsen, MS, RT(R), RDMS,RVT, FSDMS, FAIUM  
Chair & Professor - Sonography Department  
Adventist University of Health Sciences



#### Specifications :

Set Includes:	Phantom Dimensions:
1 ultrasound phantom	5.1 x 5.1 x 6.7 in.
1 storage case	13 x 13 x 20 cm
1 instruction manual	

## Ultrasound Neonatal Head Phantom (Abnormal type)



### World's First Ultrasound Neonatal Head Phantom with Hydrocephalus

This head phantom is designed to demonstrate Hydrocephalus, the shape of the skull is deformed due to intracranial pressure.

#### Training Skills

- Scanning of brain anatomy in Sagittal (Angled Parasagittal), Coronal and Transverse planes via any fontanel.
- Palpation of fontanels

#### Anatomy

- Skull
- Anterior fontanel, Posterior fontanel
- Hypertrophied lateral ventricles

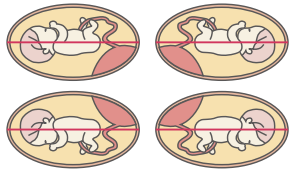
#### Product Supervision

Charlotte Henningsen, MS, RT(R), RDMS,RVT, FSDMS, FAIUM  
Chair & Professor - Sonography Department  
Adventist University of Health Sciences



#### Specifications :

Set Includes:	Phantom Dimensions:
1 ultrasound phantom	5.1 x 5.5 x 7.8 in.
1 storage case	13 x 14 x 20 cm
1 instruction manual	



The oval shape phantom abdomen can be set in four different positions.



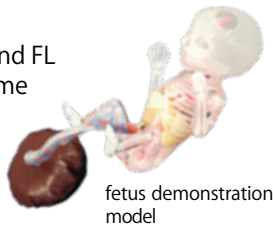
Ideal hands-on training tool for OBS and Midwifery

Features

1. SPACE FAN-ST provides high quality training for routine second trimester screening.
2. The oval shape phantom abdomen can be set in four different positions

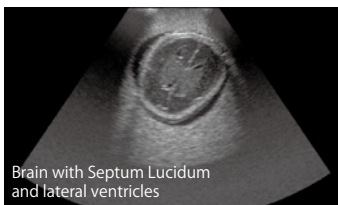
Training Skills

- Fetal size assessment: BPD, AD, AC and FL
- Measurement of amniotic fluid volume
- Determination of fetus presentation (cephalic or breech)
- Assessment of each body part
  - Head: skull and brain
  - Spine and limbs
  - Cardiac chambers, blood vessels, and lungs
- Assessment of umbilical cord and placenta position
- Determination of sex (This phantom represents a male fetus)



Anatomy

- Uterus: amniotic fluid, placenta, umbilical cord, and a 23-week fetus (10.2 in)
- Fetus: skeletal structure, brain with septum lucidum, lateral ventricles and cerebellum, heart with four chambers, lungs, spleen, kidneys, aorta, UV, UA, and the external genital



Brain with Septum Lucidum and lateral ventricles



UV

Product Supervision

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

Specifications :

Set Includes:	Phantom Dimensions:
1 mother body torso	16 x 11.6 x 8.8 in.
1 ultrasound pregnant uterus phantom	40 x 29 x 22cm
1 fetus demonstration model	
1 storage case	
1 tutorial manual (DVD)	



Improve skills in breast screening with ultrasound

Features

1. State-of-the-art breast phantom with ultrasound anatomy
2. Skills required for ultrasound breast screening can be greatly advanced with practice.
3. Excellent ultrasound image quality

Training Skills

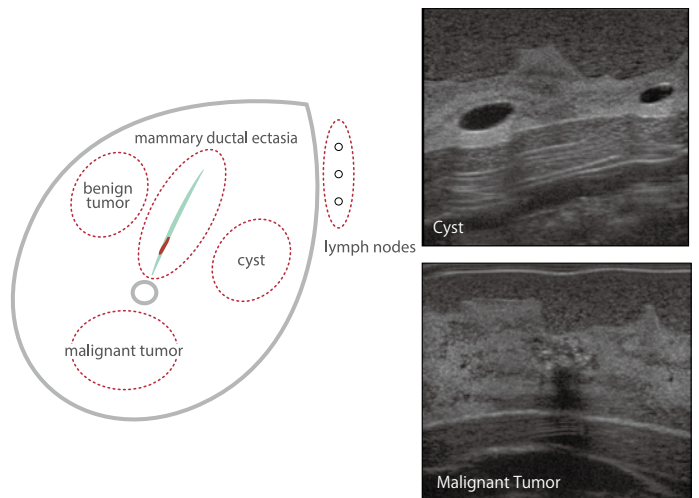
- Skills to scan full area of breast systematically
- Visualization of key anatomical landmarks
- Tracking galactophore
- Visualization and differentiation of typical pathologies
- Localization and measurement of cysts and tumor

Anatomy

- Subcutaneous adipose
- Mammary gland
- Galactophore
- Cooper's ligament
- Retromammary adipose
- Costae
- Clavicle
- Pectoralis major
- Lung
- Lymph nodes at axilla

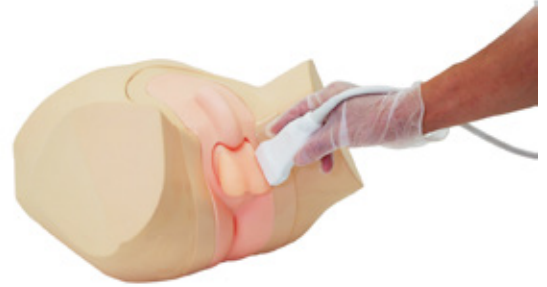
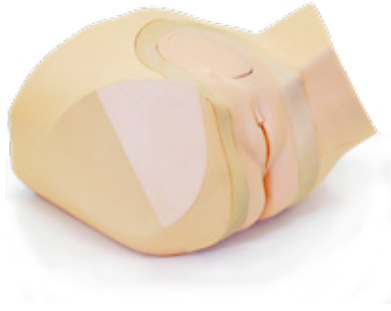
Pathologies

Cyst, mammary ductal ectasia, malignant tumor, benign tumor



Specifications:

Set Includes:	Phantom Dimensions:
1 breast phantom	7.6 x 8.8 x 2.8 in.
1 storage case	33 x 45 x 11 cm
1 tutorial manual (DVD)	



Two interchangeable inserts to cover basic OB-GYN ultrasound

Features

1. Both transvaginal and transabdominal scanning are possible.
2. Two types of interchangeable phantom inserts with different pathologies
3. Realistic view of female external genital
4. Excellent ultrasound image quality

Training Skills

- Handling and manipulation of transvaginal and transabdominal transducers
- Interpretation of sonogram
- Visualization and localization of anatomies and pathologies

Anatomy

**Pathological Phantom:**  
- endometrial cancer, uterine fibroid, dermoid cyst of ovary, blood in pouch of Douglas

**Ectopic Phantom:**  
- ectopic pregnancy in a fallopian tube, blood in pouch of Douglas

Product Supervision

Charlotte Henningsen, MS, RT(R), RDMS, RVT, FSDMS, FAIUM  
Chair & Professor - Sonography Department  
Adventist University of Health Sciences

Specifications :

Set includes:	
1 lower torso manikin	1 ultrasound ectopic pregnancy unit
1 ultrasound pathology unit	1 storage case
Phantom Dimensions:	
13.4 x 13 x 9.5 in. / 34 x 33 x 24 cm	
Set Variations:	
(US-10a)	
<b>Female Pelvic Ultrasound Phantom with 3 units</b>	
includes a normal pregnancy unit, a ectopic pregnancy unit and a pathology unit	

Repeated training to acquire skills in safe and painless examination

Features

1. Two types of interchangeable scrotums: normal and pathology
2. Excellent ultrasound image quality

Training Skills

- Patient positioning and preparation for examination
- Scrotal ultrasound screening
- Visualization of testicular cancer

Anatomy

**Normal Phantom**  
- scrotum, testicle, epididymis and penis

**Pathological Phantom**  
- scrotum, testicle, epididymis and penis  
Testicular cancer (each one in left and right testis, 10mm dia.)

Product Supervision

Charlotte Henningsen, MS, RT(R), RDMS, RVT, FSDMS, FAIUM  
Chair & Professor - Sonography Department  
Adventist University of Health Sciences

Specifications :

Set includes:	
1 pelvic body	1 normal scrotum
1 pathological scrotum	1 storage case
Phantom Dimensions:	
13.4 x 13 x 9.5 in. / 34 x 33 x 24 cm	
Replacement Parts:	
(41911-010) 1 normal scrotum unit	
(41911-020) 1 pathological scrotum unit	





Pocket-sized ultrasound is gaining popularity and starting to be utilized more in adult day care for examination. This method is preferred as catheterization may cause urinary infection.

**Training Skills**

- Handling and manipulation of transducers on bladder ultrasound
- Scanning the bladder to measure urine volume and findings.

4 variations of interchangeable inserts feature different patient scenarios.



Urine volume 50mL



Urine volume 150mL



Urine volume 300mL



Urinary retention + balloon catheter

**Specifications :**

Set includes:	
1 lower torso manikin	4 ultrasound blocks
1 storage case	1 instruction manual
Phantom Dimensions:	12 x 10 x 7 in. / 30 x 26 x 18 cm



**Best tool to teach Graf's method**

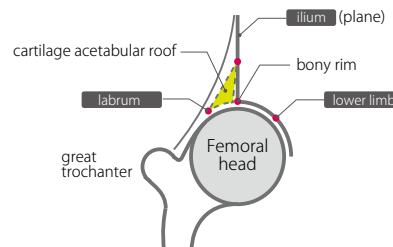
**Features**

1. The world's exclusive training model for hip sonography on a full body manikin of 6-week-old infant
2. Bilateral hips for examination
3. Key landmarks that can be recognized under ultrasound include:
  - chondro-osseous junction (bony part of femoral neck),
  - femoral head, synovial fold, joint capsule, labrum,
  - hyaline cartilage preformed acetabular roof,
  - bony part of acetabular roof, bony rim (check list I),
  - lower limb of os ilium, correct plane, labrum (check list II).
4. Facilitate anatomical understanding
5. The full body manikin with movable arms allows training in supporting and changing the position of the infant.

**Training Skills**

- Setting and preparation for hip sonography
- Changing the position of the infant
- Communication and interaction with the infant's guardian
- Correct positioning and use of the transducer
- Recognition of ultrasonic landmarks for hip sonography
- Visualization of standard, anterior and posterior planes
- Interpretation and morphological classification of the sonogram

**Anatomy**



**Product Supervision**

Univ. Prof., Prof. hc. Reinhard Graf, M.D.

**Specifications :**

Set includes:	Phantom Dimensions:
1 ultrasound infant phantom	21.6 x 9.8 x 5.1 in.
1 instruction manual	55 x 25 x 13 cm

US-17 **Rheumatoid Hand Phantom**



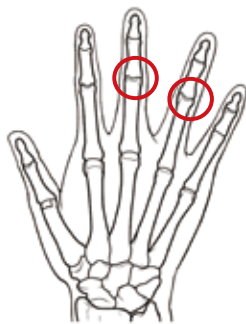
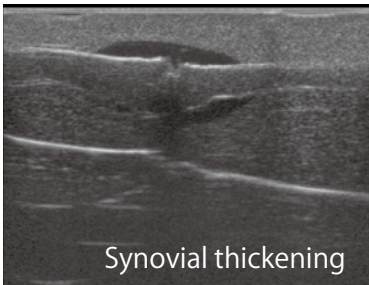
**Ultrasound examination is a key skill for early diagnosis on rheumatoid arthritis.**

**Features**

1. For skills training in ultrasound examination on rheumatoid arthritis
2. Synovial thickening and increased synovial fluid are simulated on middle and ring finger.

**Training Skills**

- Ultrasound examination on rheumatoid arthritis



**Specifications :**

Set includes:	
1 hand manikin	1 storage case
1 instruction manual	
Phantom Dimensions:	6 x 2 x 8 in. / 17 x 5 x 21 cm

US-3 **Abdominal Intraoperative & Laparoscopic Ultrasound Phantom "IOUSFAN"**



**Effective training tool for abdominal intraoperative ultrasound examination**

Innovative phantom simulating abdominal open intraoperative and laparoscopic ultrasound examination

**Features**

1. Soft phantom materials allow realistic probe manipulation.
2. Various simulated lesions including biliary stones and cysts, solid tumors (hypoechoic, hyperechoic and target-appearance) in the liver, pancreas, spleen and kidneys
3. Detachable stomach and duodenum allows various scanning methods of the bile duct and pancreas.

**Training Skills**

- Abdominal intraoperative ultrasound examination
- Laparoscopic ultrasound examination

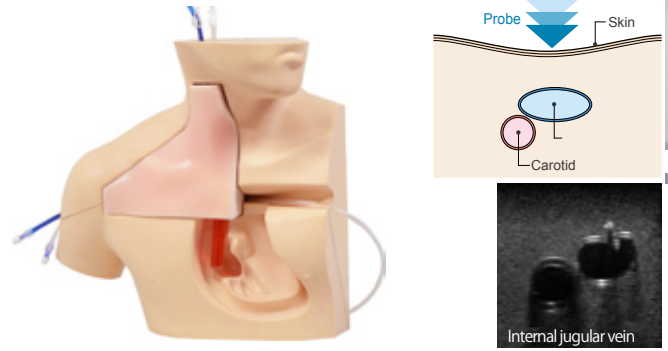
**Anatomy**

- Liver (segmental anatomy, portal and hepatic venous systems, ligamentum teres and ligament 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.)



**Specifications :**

Set includes:	Phantom Dimensions:
1 upper abdomen ultrasound phantom	12 x 15 x 7 in.
1 stomach ultrasound phantom	30 x 38 x 17.5 cm
1 phantom container	
1 tutorial manual (DVD)	



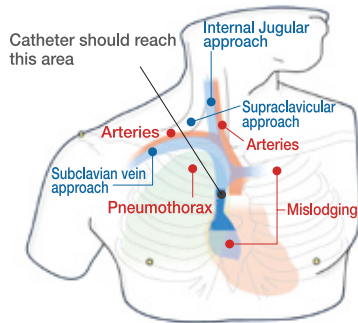
**Great practice simulator for CVC insertion with a variety of methods**

**Features**

1. Realistic ultrasound-guided CVC
2. Landmark puncture pad with anatomically correct vein bifurcations simulates mechanical complications include pneumothorax, mislodging and artery puncture
3. Transparent anatomical block for anatomical understanding and guide wire manipulation
4. Introductory ultrasound training block to acquire basics of ultrasound guided venous access
5. Both internal jugular and subclavian (axillary) veins are accessible
6. Realistic venous collapse

**Anatomy \***

- Internal jugular vein & carotid artery
- Subclavian vein & artery
- Superior vena cava
- Ribs
- Sternum
- Lung



**Specifications :**

Set includes:	M93UB CVC II	M93C CVC III
1 male upper torso manikin	○	○
1 landmark puncture pad	○	-
1 ultrasound puncture pad	○	-
2 CVC placement pads	-	○
1 transparent anatomical block	○	○
2 plastic jars	○	○
1 introductory training block	○	○
1 red coloring powder	○	○
1 blue coloring powder	○	○
1 irrigation bottle	○	○
2 syringe (2.5ml, 50ml 1 each)	○	○
1 sample needle	○	○
Phantom Dimensions:	16 x 18 x 13 in. / 40 x 20 x 34 cm	
Replacement Parts (common):		
(11347-119) 2 land mark puncture pad		
(11347-170) ultrasound puncture pad (set of 2)		
(11347-210) 2 REAL VESSELS	(11347-240)2 CVC placement pad	
(11347-260) 1 pulsation unit (for M93UB)		

**For a sequence of procedural skills from the needle insertion to catheter placement, including Seldinger technique.**

**Features**

In addition to features of CVCII:

1. Repeated insertion:  
The frictionless tissue of the pad allows Seldinger technique and repeated insertion and removable of the catheter with less needle marks left on the surface of the pad.
2. Both Landmark and ultrasound-guided CVC in one.  
\*mislodging to left subclavian cannot be simulated in CVC III

**Training Skills \***

- Ultrasound-guided CVC
- Landmark guided CVC
- Ultrasound-guided venous access
- Prevention of mechanical complications

**Product Supervision**

Masahiro Tanabe, M.D., Ph.D., Professor Director General Medical Education Center Chiba University School of Medicine  
Kinya Sando, M.D., Ph.D., Professor Director Department of Human Dietetics  
Masanori Hoki, M.D., Ph.D., Professor Department of Human Dietetics Graduate School of Human Science Osaka Shoin Women's University  
Joho Tokumine, M.D.Ph.D., Department of Anesthesia, Kawatetsu Chiba Hospital

\*Common for both CVCII and CVCIII

**11347-210 Introductory Ultrasound Training Block "REAL VESSEL"**



**Provides training in hands-eye coordination and basic skills in ultrasound-guided venous access.**

**Features**

1. 2 simulated vessel lines: straight and curve.
2. Lines have slope to represent vessels with different depth.
3. Vessel wall yields under pressure of a needle tip.

**Training Skills**

- Visualization and localization of the vessels
- Transducer manipulation
- Basics for ultrasound-guided vascular access

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

MW18

## Ultrasound-Guided PICC Training Simulator



### Comprehensive hands-on training for PICC insertion

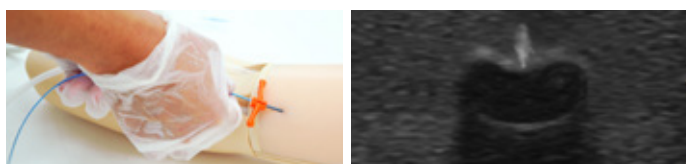
This model provides training in full procedural skills from needle insertion, manipulation of the PICC to the placement of the distal tip in the SVC. Both basilic and cephalic veins are accessible for different levels of difficulty in cannulation. Replaceable puncture pad is ultrasound-compatible. Anatomically correct bifurcation of the vein provides realistic resistance on its outer walls and simulates complications such as catheter malpositioning.

#### Features

1. Excellent image quality and visualization of the needle tip for ultrasound guided venous access
2. Movable shoulder to demonstrate positioning
3. Realistic flashback in needle provides confirmation for successful venous access
4. Ribs and right clavicle provide anatomical understanding of correct PICC placement
5. Anatomically correct bifurcation of the vein
6. Simulation of cannula malposition

#### Training Skills

- Correct needle insertion, PICC, manipulation and catheter tip placement
- Selection a puncture site under ultrasound guidance
- The Seldinger technique
- Technique for the peel-away sheath
- Advancing of the cannula into the SVC



Cannulation

#### Specifications :

Set includes:	
1 male upper torso with the right arm	1 syringe
2 PICC puncture pads	1 instruction manual
10 simulated blood (swab type)	1 storage case
1 jar	
Phantom Dimensions:	
15.7 x 5.9 x 23.7 in. / 40 x 15 x 60 cm	
Replacement part:	
(11348-010) 2 PICC puncture pads	

## MW4 Ultrasound-Guided Thoracentesis Simulator MW4A -Strap-on set-



MW4

MW4A



### Thoracentesis simulator both for table top and hybrid training session with patients

#### Features

1. Ribs can be palpated.
2. Realistic needle-penetrating feeling
3. Strap-on puncture units to learn patient positioning and communication
4. Two sites for access: right mid-scapular line and left mid-axially line
5. Volume of pleural effusion can be controlled to set different levels of challenges.
6. Body torso for one-man training.(Only for MW4)

MW15

## Ultrasound-Guided Pericardiocentesis simulator



### Training for safe Pericardiocentesis with ultrasound guidance

#### Features

1. Landmarks for subxiphoid approach and the parasternal approach.
2. Realistic feeling when the needle pierces the "pericardial sac"

MW17

## Ultrasound-Guided Thoracentesis /Pericardiocentesis simulator

### Value set for two skills in one unit

#### Specifications :

Set includes:	MW4	MW4A	MW15	MW17
1 adult chest model	○	-	○	○
1 mid-axially line unit	○	○	-	○
1 mid-scapular line unit	○	○	-	○
1 pericardiocentesis unit	-	-	○	○
1 pillow for positioning	○	-	○	○
1 explanation model for thoracentesis	○			○
1 instruction manual	○	○	○	○
Accessories				
-1 irrigator	○	-	-	○
-1 funnel	○	○	-	○
-1 syringes (50ml)	○	○	○	○ x2
-1 joint hose	-	-	○	○
-1 tube with three-way stopcock	○	○	-	○
-1 plastic jar	○	○	-	○



**Lumbar puncture training with ultrasound guidance**

**Features**

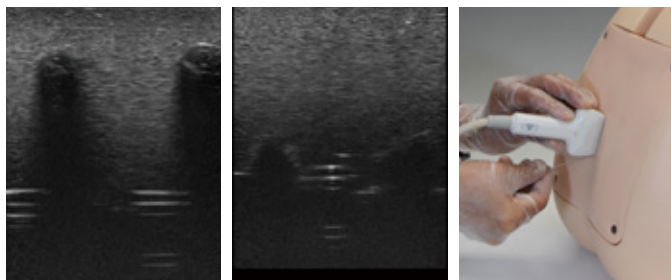
1. Ultrasonic landmarks of lumbar spine can be visualized.
2. Replacement parts are durable for multiple procedures.
3. This simulator can be positioned in the upright or lateral position.
4. Translucent block makes the needle trace visible.
5. The lumbar region model provides a platform for wide training opportunities, by adding interchangeable training blocks for landmark and fluoroscopic procedures.

**Training Skills**

- Ultrasound-guided lumbar puncture
- Ultrasound-guided epidural anesthesia
- CSF collection and CSF pressure measurement

**Anatomy**

- Lumbar spine (L2-L5) including spinous process and transverse process
- Spinal canal, epidural space



**Specifications :**

Set includes:	Replacement parts:
1 lumbar region model	(11348-190) 1 ultrasound lumbar puncture/epidural block
1 ultrasound lumbar puncture/epidural block	(11348-230)
1 ultrasound lumbar region skin cover	1 ultrasound lumbar region skin cover for M43E
2 lumbar region support bases	
1 irrigator bag/ syringe/ stand for irrigation bag	Phantom Dimensions:
1 instruction manual	13 x 8.3 x 11.8 in.
	33 x 21 x 30 cm



**Provides training in ultrasound guided breast biopsy**

**Features**

1. Fine Needle Aspiration Biopsy (FNAB), Core Needle Biopsy (CNB) and Mammotome biopsy can be performed under ultrasound guidance.
2. Tissue of the breast phantom represents softness and resistance of the mammary gland.
3. Excellent image quality
4. Targets are colored to confirm successful sampling.
5. Targets are embedded in three levels to allow training in needle access with different angles and depth.
6. Transparent and opaque type phantoms provides various levels of training.
7. An inexpensive and disposable phantom that provides many attempts.

**Training Skills**

- Hand-eye coordination in ultrasound biopsy
- Localization of targets under ultrasound guidance
- Sampling of target

**Basic (Transparent)**

**Hand-eye coordination**

● Hyperchoic target

Size of targets: 6 mm dia. and 10mm dia.  
Type of targets: Hyperchoic (blue)  
Number of targets: 12 pieces

---

**Advanced (Opaque)**

**Acquisition of skills in safe and reliable needle biopsy**

● Hypochoic target  
● Hyperchoic target

Size of targets: 6 mm dia. and 10mm dia.  
Type of targets: Hyperchoic (blue), Hypochoic (red)  
Number of targets: 12 pieces

**Specifications:**

Set Variations:	Phantom Dimensions:
Duo set: (11387-000) transparent + opaque type	6.3 dia x 3.2 in.
Transparent set: (11387-100) 1 pair of transparent type	16 dia x 8 cm
Opaque set: (11387-200) 1 pair of opaque type	

## US-4 Breast Ultrasound QA Phantom

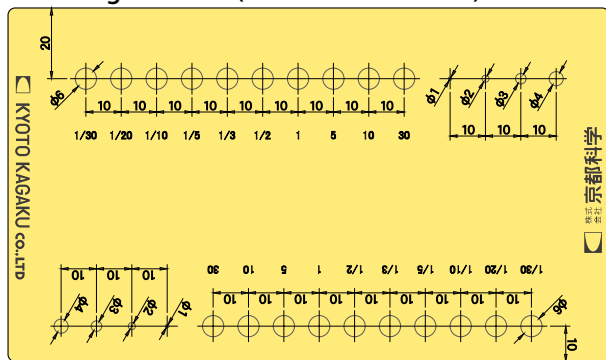


### Ensure highly detailed images for reliable breast cancer examinations

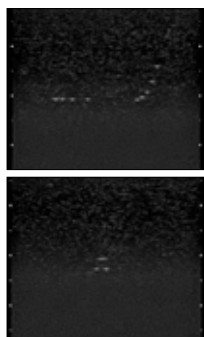
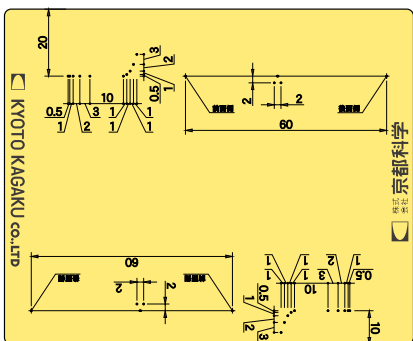
Ultrasound QA phantom for high precision imaging in the high frequency sonography around 10 MHz that is required in breast examination.

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.

#### Mass targets block (contrast resolution)



#### Mass targets block (contrast resolution)



#### Specifications :

Set includes:	Phantom Dimensions:
1 mass targets blocks	mass targets block phantom size:
1 dot targets blocks	7.2 x 3 x 4.4 in. /18 x 7.5 x 11 cm
1 thermometer	dot targets block phantom size:
1 storage case	5.4 x 3 x 4.4 in./13.5 x 7.5 x 11 cm

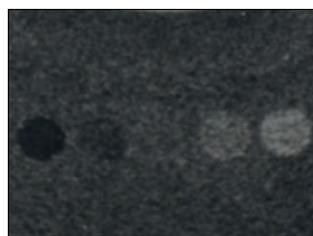
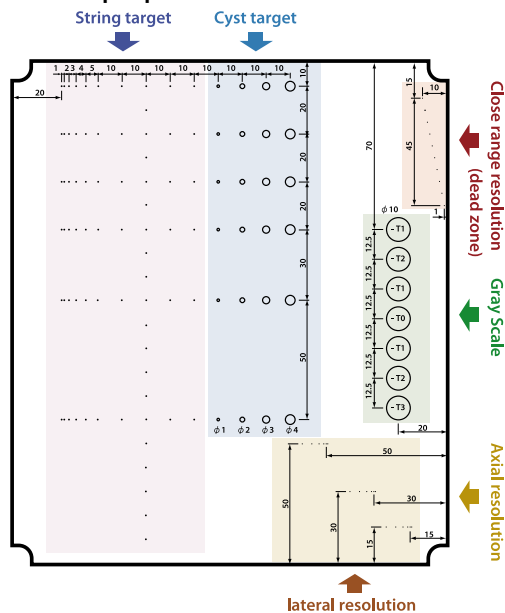
## US-2 Ultrasound Quality Assurance Phantom (Multi Purpose Phantom N-365)



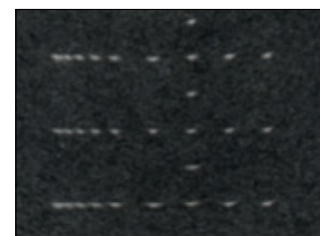
### Durable and stable

Useful both for daily assessment and further research. Gray scale for evaluation, cyst targets with non-resonance cylinders, line targets for geometrical evaluation including close range (dead zone) resolution, axial and lateral resolution are prepared for scanning. The phantom is designed to allow scanning from all four side walls.

#### N-365 Multipurpose Phantom



Gray Scale

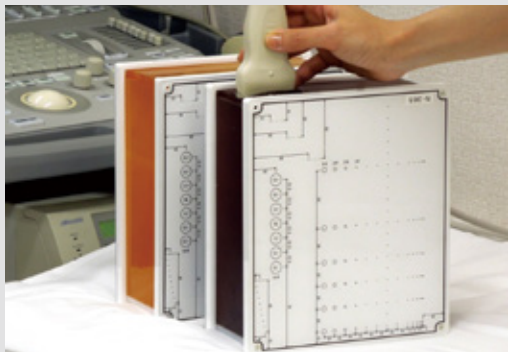


String target

#### Specifications :

Set includes:	Phantom Dimensions:
1 phantom	7.6 x 8.8 x 2.8 in.
1 storage case	19 x 22 x 7 cm

# Features of Ultrasound Phantom Materials



Comparison of 2004 phantom and 2012 phantom.

## Materials for Ultrasound Phantoms

Japanese patent No. 3650096

Durable, stable with homogeneous granular background reflection with excellent and controllable echogenicities

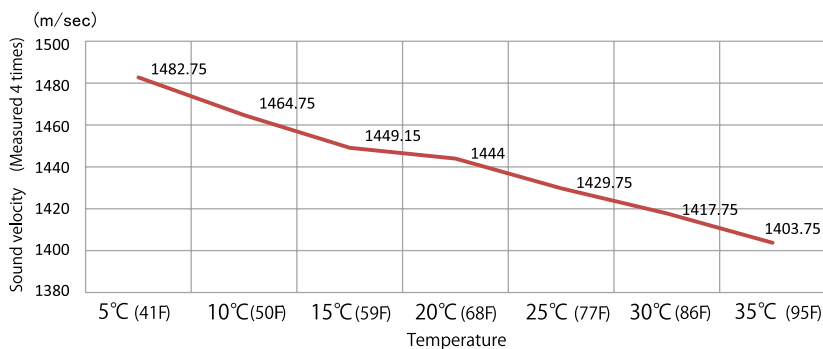
Sonic velocity: 1434m/sec at 25 degrees C

Density: 0.954g/cm<sup>3</sup>

Attenuation rate: 0.57dB/cmMHz at 25 degrees C

Acoustic impedance: 1.37 rayl at 25 degrees C

	15 degrees C	25 degrees C	35 degrees C
Speed of sound	1449.5 m/sec	1434.1 m/sec	1403.9 m/sec
Attenuation rate	0.58 dB/cmMHz	0.57 dB/cmMHz	0.55 dB/cmMHz

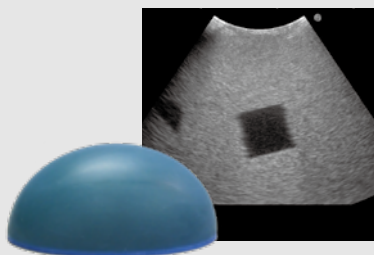


Natori H, Igarashi T, Arakawa M.  
Durable fine resolution test phantom  
for diagnostic ultrasound system  
ECR 2013 Poster C-1765

"Durable fine resolution test phantom  
for diagnostic ultrasound system",  
H.Natori 2013

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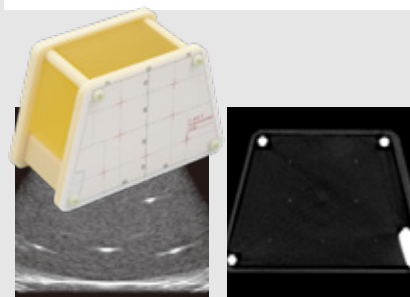
### Fundamental Ultrasound Phantom



### Research Model for Transcranial Doppler (TCD)



### CT-Ultrasound Fusion QA Phantom





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