Concept behind Kyoto Kagaku phantoms —for community and the world—

Case example: DEVELOPING THE FRACTURE INFANT PHANTOM

Child maltreatment

Children around the world are victims to domestic violence and abuse, yet the problem is often overlooked. Noticing the signs of an abusive fracture of a child is the first step to putting an end to these maltreatments. This phantom has been designed and developed to cultivate such observation skills in future X-ray radiologists and technicians.

Bone fractures - is there sign of abuse?

Spiral fracture

Certain causes of non-accidental pediatric injuries, such as spiral fractures, include maltreatment stimulated by anger or distress.

Supravcondylar humerus fracture

A supravcondylar humerus fracture occurs on the distal humerus above the epicondyles and is a fracture commonly observed in children. Pediatric cases account for approximately 20% of all lateral condyle fractures.

The Phantom

Typical fractures of an abusive attack have been replicated on the left side of the infant model's body and limbs, including the ulna and radius. Smaller fractures can be seen around the phantom’s wrist.

Signs of callus

Caluses on their own are not definitive proofs of abuse cases. However, a number of callus examples can be a result of abusive treatment. For this particular model, calluses have been simulated in this wound-healing phase 5 of remodeling to the original bone contour.

Skull fractures

A linear skull fracture may be another indication of child maltreatment. A common cause of injury is blunt force trauma in which the energy from a blow is transferred over a wide surface area of the skull. At times, fractures display better on a key-view than CT imaging and it is crucial to prevent such fractures from being overlooked.

Back, scapula and rib fractures

Signs of fractures on the scapula and ribs are to be inspected not only by their form, but also their location. Rib fractures close to the vertebrae may be potential indicators of the child being thrown.

Skeletal fractures - are there signs of abuse?

The development of Kyoto Kagaku phantoms begins in the early 1960’s with the collaboration of Shimadzu. Original human tissue substitute materials for diagnostic energy range and therapeutic energy range were also invented. These substitute materials with ultrasound compatibility were a recent development that opened doors to a variety of QA and training phantoms in the field of sonography.

Through anatomical research and model casting breakthroughs such as our long sought human tissue substitutes, Kyoto Kagaku strives to perfect the production of anthropomorphic phantoms for medical imaging. Kyoto Kagaku will continue to uphold high standards in developing products that effectively contribute to patient safety and training of healthcare professionals.

1895
The educational scientific division of Shimadzu Corp is established.

1909
Shimadzu anatomical human model with muscles wins the Gold prize at the International exhibition in Alaska-Futon Pacific Ocean

1925
The educational scientific specimens division begins to manufacture of anatomical models

1948
Kyoto Kagaku is established.

1954
First resinous anatomical models

1955
First resinous anatomical models

1967
Development of Stomach Phantom in partnership with Shimadzu Corp.

1986
First participation in RINA (Radiological Society of North America)

1994
Development of Synthetic Bones

2001
Multi-Slice CT Phantom

2004
First Whole Body Phantom

2005
First ultrasound Examination Phantom

2009
Heart Phantom N1 “LUNGIAN”

2007
Whole Body Phantom PBU-50

2008
Ultrasound Examination Phantom ABDIFAN

2009
Awarded “Grand Prize” of Good Company Award

2010
FASTER FAN

2012
Dental Head Phantom

2013
Pediatric Whole Body Phantom PBU-70

2017
See Page D-11!
Diagnostic Radiology

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Sectional Phantom Series (Plain X-rays)

Sectional Phantoms allow for imaging of individual anatomy as needed.

### Head

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-000</td>
<td>Head (Opaque)</td>
</tr>
<tr>
<td>41926-010</td>
<td>Head (Transparent)</td>
</tr>
</tbody>
</table>

Stand-alone design can be used with the adjustable head positioning stand to demonstrate accurate skull positioning. *Opaque model shown.

### Body

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-060</td>
<td>Thorax (Opaque)</td>
</tr>
<tr>
<td>41926-070</td>
<td>Thorax (Transparent)</td>
</tr>
</tbody>
</table>

Includes thoracic skeletal system with embedded mediastinal space and bronchus to provide realistic imaging. The scapulae are rotated outside of the lung fields for proper PA chest imaging. *Opaque model shown.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-080</td>
<td>Pelvic (Opaque)</td>
</tr>
</tbody>
</table>

Includes lumbar/sacral spine, pelvic bony anatomy and proximal femurs.

### Arm

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-140</td>
<td>Right Elbow (Opaque)</td>
</tr>
<tr>
<td>41926-150</td>
<td>Right Elbow (Transparent)</td>
</tr>
</tbody>
</table>

Normal flexion range allows for AP/lateral and partial flexion views with one phantom. *Transparent model shown.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-020</td>
<td>Right Hand (Opaque)</td>
</tr>
<tr>
<td>41926-030</td>
<td>Right Hand (Transparent)</td>
</tr>
</tbody>
</table>

*Transparent model shown.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-040</td>
<td>Left Hand (Opaque)</td>
</tr>
<tr>
<td>41926-050</td>
<td>Left Hand (Transparent)</td>
</tr>
</tbody>
</table>

*Opaque model shown.

### Leg

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-180</td>
<td>Right Knee (Opaque)</td>
</tr>
<tr>
<td>41926-190</td>
<td>Right Knee (Transparent)</td>
</tr>
</tbody>
</table>

Freely movable patella and joint allows for realistic positioning of the knee for AP/lateral, oblique, sunrise and tunnel views. *Transparent model shown.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-100</td>
<td>Right Foot (Opaque)</td>
</tr>
<tr>
<td>41926-110</td>
<td>Right Foot (Transparent)</td>
</tr>
</tbody>
</table>

*Transparent model shown.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41926-120</td>
<td>Left Foot (Opaque)</td>
</tr>
<tr>
<td>41926-130</td>
<td>Left Foot (Transparent)</td>
</tr>
</tbody>
</table>

*Opaque model shown.

Optional parts:

- Adjustable head supporter

Stand-alone design can be used with the adjustable head positioning stand to demonstrate accurate skull positioning.

**Note:**

- Opaque model shown.
- Transparent model shown.
New phantom material is designed for rough handling, improved durability and low maintenance. Skeletal system with embedded lungs, heart, liver and kidneys. PBU-90 includes a whole body phantom (separable into 10 parts) and head supporter. Freely articulating joints allow for realistic positioning.

Features

- Durability testing
- Open hand position

Main joints have close-to human articulation

- Shoulders: rotate full 360 degrees in the sagittal plane, approx. 180 degrees to side-ways.
- Elbows: bend up to approx. 90 degrees.
- Hip Joints: rotate forward up to approx. 90 degrees, then abduct up to 45 degrees each.
- Knees: bend up to approx. 90 degrees.

An adjustable head supporter comes with the set facilitating various head position setting.

Specifications

- **CT-DI Phantom (Head and Body Phantom)**
  - Phantom size and weight
    - Body phantom: 32 dia. x 15 cm, 15 kg
    - Head phantom: 12.6 dia. x 5.9 in, 33 lb
    - Materials: Acrylic resin
    - Accessory: Storage case
  - Head phantom: 16 x 15 cm, 4 kg
  - 6.3 x 5.9 in, 8 lb

CT-DI Phantom (Head and Body Phantom)


CT-DI Phantom (Head and Body Phantom)

Features

- Durability testing
- Open hand position

Main joints have close-to human articulation

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  - 6.3 x 5.9 in, 8 lb

CT-DI Phantom (Head and Body Phantom)


Custom order example: head and body phantom in different types of tissue substitutes

The set of head and body phantom made of PH-40

41363-070 Storage Case II for PH-2/2B/60 (a pair)

*Custom order example*
**PH-55**

CT ERF Phantom HIT

A phantom designed for physical evaluation of iteratively reconstructed images under low CNR.

**Features**

1. The phantom is designed to physically and quantitatively evaluate interactively reconstructed images in the low CNR area, such as abdomen, where MTF of PSF is less useful comparing to high CNR area.
2. The phantom uses edge spread function (ESF) to calculate MTF of the low CNR images, which facilitate assessing performance properties of iteratively reconstructed images under low CNR.

**Evaluation Features**

1. Verification of slice thickness in reconstruction
2. Measurement of slice thickness
3. Verification of uniformity

**Specifications**

Set includes:
- Cylindrical container (200 mm dia.)
- Measurement plates: 5 variations (HU 20, 50, 100, 200, and 500)
- Rotation holder
- Fixture for the cylindrical container

Materials:
- Acrylic resin, polyurethane

Optional part:
- 41919-010 Angle adjustment holder (table-top type)

Compatible with PH-9

---

**PH-56**

Tomosynthesis Phantom NS

The phantom is designed for daily quality control of Tomosynthesis, allowing evaluation of reconstruction slices and uniformity in the measurement of slice thickness through showing the images numerically and graphically. It is also useful in evaluation of image quality that varies depending on reconstruction function.

**Modality**

CT

tomosynthesis

**Features**

1. Comparison between CT images and tomosynthesis images.
2. Evaluation of images in three different planes with one scan.
3. A variety of nodules that simulates GGO
5. Visual evaluation of image quality of simulated nodules, using contrast detail diagram for contrast resolution.
8. Elliptical radiation absorber that simulate human body, to study scattering effect of soft tissue.

**Specifications**

Materials:
- PP, polyurethane foam, polyurethane

Simulated nodules:

<table>
<thead>
<tr>
<th>Size</th>
<th>HU number</th>
<th>Specific gravity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 mm</td>
<td>0</td>
<td>1.06</td>
</tr>
<tr>
<td>3 mm</td>
<td>-250</td>
<td>0.47</td>
</tr>
<tr>
<td>4 mm</td>
<td>-375</td>
<td>0.35</td>
</tr>
<tr>
<td>5 mm</td>
<td>-550</td>
<td>0.26</td>
</tr>
<tr>
<td>6 mm</td>
<td>-640</td>
<td>0.24</td>
</tr>
<tr>
<td>7 mm</td>
<td>-730</td>
<td>0.15</td>
</tr>
<tr>
<td>8 mm</td>
<td>-780</td>
<td>0.75</td>
</tr>
<tr>
<td>9 mm</td>
<td>-825</td>
<td>0.64</td>
</tr>
<tr>
<td>10 mm</td>
<td>-900</td>
<td>0.30</td>
</tr>
</tbody>
</table>

*For the radiation absorber in different sizes can be requested as a custom order

---

**PH-57**

Thorax Low Contrast Phantom ODA-LC

For image evaluation of low contrast targets with CT, tomosynthesis as well as cone beam CT.

**Modality**

CT

tomosynthesis

**Features**

1. Comparison between CT images and tomosynthesis images.
2. Evaluation of images in three different planes with one scan.
3. A variety of nodules that simulates GGO
5. Visual evaluation of image quality of simulated nodules, using contrast detail diagram for contrast resolution.
8. Elliptical radiation absorber that simulate human body, to study scattering effect of soft tissue.

**Specifications**

Materials:
- PP, polyurethane foam, polyurethane

Simulated nodules:

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<tr>
<td>10 mm</td>
<td>-900</td>
<td>0.30</td>
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*For the radiation absorber in different sizes can be requested as a custom order

---

New Products
Whole Body Phantom “PBU-50”

An essential asset for every radiography program

Whole Body Phantom PBU-50 and CT Whole Body Phantom PBU-60 are full-size anthropomorphic phantoms with movable and detachable joints for positioning. Each phantom can be separated into 10 individual parts, allowing a wider application in training and research. Neither phantom has metal parts or liquid structure.

**Anatomies**
- Skull
- Anterior fontanel, Posterior fontanel
- Cerebrum
- Cerebellum
- Hypertrophied lateral ventricle

**Specifications**
- Set Includes:
  1. whole body phantom (separable into 10 parts)
  2. *bones and internal organs listed above are embedded*
  3. head supporter
  4. flat head screwdriver
  5. 1 set of sample X-ray images

**PBU-50**
- Phantom height: 165 cm / 65 in
- Phantom weight: 50 kg / 110 lb
- Packing size: 85 x 60 x 44 cm x 2 boxes
- Packing weight: 80 kg / 176 lb

**PBU-60**
- Phantom height: 165 cm / 65 in
- Phantom weight: 100 kg / 220 lb
- Packing size: 165 x 60 x 44 cm x 2 boxes
- Packing weight: 170 kg / 375 lb

---

**Ultrasound Neonatal Head Phantom (Abnormal type)**

This head phantom is designed to demonstrate abnormal anatomy, such as Hydrocephalus, in which the shape of the skull is altered due to intracranial pressure.

- Skull
- Anterior fontanel, Posterior fontanel
- Cerebrum
- Hypertrophied lateral ventricle

**Anatomies**
- Brain
- Cerebrum
- Hypertrophied lateral ventricle
- Ventricle
- Third cerebroventricle
- Fourth ventricle
- Septum lucidum

**Training Skills**
Scanning of brain anatomy in Sagittal (Angled Parasagittal), Coronal and Transverse planes via any fontanel.

**World’s First Ultrasound Neonatal Head Phantom**
Head ultrasound is one of the most difficult scanning skills, and trainees have few opportunities for training. This model features an accurate depiction of a newborn’s cerebral anatomy, and facilitates a realistic user experience with its life-like soft touch.

**PBU-50** is ideal patient for radiographer student with close-to-human absorption rate and articulation.

**PBU-60** has full internal organs with proper HU numbers.

**Anatomies**
- Synthetic skull
- Cervical vertebrae
- Vertebrae
- Clavicles
- Ribs
- Sternum
- Scapula
- Coxal bones
- Femurs
- Internal organs
  - Brain
  - Cerebrum
  - Mesencephalon
  - Cerebellum
  - Cerebral ventricles
  - Eye balls
  - Arteries with contrast medium (left half only)
  - Lungs
  - Pulmonary vessels
  - Trachea
  - Heart
  - Liver
  - Portal and hepatic veins
  - Pancreas
  - Kidneys
  - Gallbladder
  - Spleen
  - Seminal vesicle
  - Aorta
  - Cava
  - Ureter
  - Urinary bladder
  - Prostate
  - Rectum
  - Sigmoid Colon

**Specifications**
- Whole Body Phantom “PBU-50”
- CT Whole Body Phantom “PBU-60”

---

**Whole Body Phantom “PBU-50”**

- Packing size: 85 x 60 x 44 cm x 2 boxes
- Packing weight: 80 kg / 176 lb

**CT Whole Body Phantom “PBU-60”**

- Packing size: 165 x 60 x 44 cm x 2 boxes
- Packing weight: 170 kg / 375 lb

---

**Optional Parts**
- 41363-070

---

**Main joints have close-to-human articulation**

- Shoulders: rotate full 360 degrees in the sagittal plane, approx. 180 degrees to side-ways.
- Elbows: bend up to approx. 90 degrees.
- Hip Joints: rotate forward up to approx. 90 degrees, then abduct up to 45 degrees each.
- Knees: bend up to approx. 90 degrees.

An adjustable head supporter comes with the set, facilitating various head positioning.

---

**Anatomies**
- Bones and internal organs listed above are embedded.
- Head supporter
- Flat head screwdriver
- 1 set of sample X-ray images

**Specifications**
- Set Includes:
  1. whole body phantom (separable into 10 parts)
  2. Optional Parts: 41363-070
  2 storage cases
Diagnostic Radiology

**41330-000-11**
Fractured Hand/Forearm Phantom

Optional Parts for PH-2/2B/60

X-ray phantom for trauma evaluation

**41363-070**
Storage case II

(a pair)

Optional Parts for PH-2/2B/60

---

**Body plates for PH-2/2B**

Optional Parts for PH-2/2B/60

Body plates to simulate a body of BMI30

The body plate provides the phantom with a variety of body shapes.

---

**Customized PH-2B**

CT Whole Body Phantom with Pathologies

Pathological findings in the phantom expand possibilities in training application.

---

**PH-2C**

Pediatric Whole Body Phantom “PBU-70”

This Phantom is easy to handle positioning, and provides complete bone images for every joint.

Pediatric Whole Body Phantom is modeled after a 5-year-old child of 105cm (43”) in height. This is a life-size, full body anthropomorphic phantom with a state-of-the-art synthetic skeleton, lungs, liver, mediastinum and kidneys. Its movable and detachable joints allow various positioning.

---

**Features**

1. Main joins have life-like articulation, allowing various positioning for plain X-ray.
2. Training and research applications can be enriched by disassembling the phantom into 10 individual parts (head, limbs and trunk).
3. The phantom has no metal parts or liquid structures.
4. No defect in bone images of joints.

---

**Anatomies**

- Full synthetic skeleton
- Main pulmonary vessels, mediastinum, liver, kidneys

---

**PH-2D**

Bone Fracture Pediatric Phantom “PBU-70B”

Improve your skills in detecting bone fractures in children.

Training in pediatric radiography can be enriched with clear and subtle bone fractures. Typical fractures resulting from child abuse are also included.

---

**Training Skills**

- Plain X-ray photography and basic CT scanning
- Basic patient positioning for X-ray and CT

---

**Specifications**

1. Pediatric whole-body phantom
   - Life-size, 5-year-old consists of 10 parts
   - 1 head supporter
   - 1 hand fixture belt
   - 1 set of sample X-ray images

2. Size:
   - Phantom height: 110 cm/43.3 in
   - Phantom weight: 20 kg/44 lb

3. Optional Parts:
   - 41363-080
      - Storage case for PH-2C

---

**HU number**

- Brain tumor 130
- Subarachnoid bleeding 190
- Pulmonary tumor surface 30 inside 130
- Hepatic tumor 70
- Pancreatitis 30
- Gall stone 170
- Kidney stone 70
- Appendicitis surface 20 inside 40
- Spondylolisthesis

---

**Set includes:**

- 1 pediatric whole body phantom:
  - Life-size, 5-year-old consists of 10 parts
- 1 head supporter
- 1 hand fixture belt
- 1 set of sample X-ray images

---

* Specify with or without adult teeth at the time of order.
Newborn Whole Body Phantom

The world’s first full body phantom for neonatal radiography

Newborn Whole Body Phantom is the world’s first full body phantom for neonatal radiography with correct anatomical structure and movable limbs. Neonatal radiography is an important tool in NICU (Neonatal Intensive Care Unit). Patient positioning and immobilization are essential features. This phantom provides opportunities for hands-on training and experiments to minimize radiation exposure to newborn babies.

**Features**
1. Limbs rotate 360 degrees at shoulders and hip joints.
2. Left hand is clenched and right hand is open.
3. Life size whole body newborn baby.
4. Original human tissue substitute.
5. No metal parts or liquid structures.
6. Meconium aspiration syndrome can be made per custom order.

**Training Skills**
- Immobilization
  - Manual immobilization
  - Immobilization with fixtures
  - Autopsy imaging

**Specifications**

**Set Includes:**
- 1 newborn whole body phantom
- 1 set of sample X-ray images
- 1 instruction manual

**Size:**
- Phantom size: 42 cm tall/16.5 in
- Phantom weight: 2.8 kg /6.2 lb

**Anatomies**
- Skull, spine, ribs, pelvis, scapulae, clavicles, humeri, radius/ulnae, bones of hands, femora, fibulae, tibiae and bones of feet
- Lungs and mediastinum

**Newborn Whole Body Phantom**

The world’s first full body phantom for neonatal radiography

PH-50

1. Male chest torso main body: synthetic bones are embedded in the chest girth 56 in.
2. Medastinum: heart, trachea, pulmonary vessels (right and left) no internal structure block: no internal structure.
3. Abdomen (diaphragm) block: no internal structure.
4. 15 simulated tumors (15 variations 1 piece each).
5. 3 varieties of Hounsfield number: approx. -800, -630, +100.
6. 5 sizes for each type: diameters 0.3, 0.5, 0.8, 1.0, 1.2 cm.
7. 5 sizes for each type: diameters 0.12, 0.2, 0.32, 0.39, 0.47 in.

**Specifications**

**Set Includes:**
- 1 male chest torso
- Main body: synthetic bones are embedded
- Mediastinum: heart, trachea, pulmonary vessels (right and left) no internal structure
- Abdomen (diaphragm) block: no internal structure
- 15 simulated tumors (15 variations 1 piece each)
- 3 varieties of Hounsfield number: approx. -800, -630, +100
- 5 sizes for each type: diameters 0.3, 0.5, 0.8, 1.0, 1.2 cm
- 5 sizes for each type: diameters 0.12, 0.2, 0.32, 0.39, 0.47 in

**PH-1 Multipurpose Chest Phantom N1 “LUNGMAN”**

**Broad range of possible applications in research and training**

The phantom provides life-like radiographs very close to actual clinical images. The three-dimensional structure allows both PA and LATERAL images to be obtained. The phantom bones and vessels show life-like contrast gradations on the image along with tube voltages. PH-1 is used in a study by the FDA to create a database of CT scans with different scanners and protocols, as a resource for assessment of lung nodule size estimation method.

**Features**
1. Applicable for both plain radiography and CT scanning.
2. Simulated tumors and other targets can be attached at any points in the lung field.
3. Wide variety of uses in interpretation training, anatomical education, evaluation and assessment of devices and other research.
4. Accurate anatomy and high quality substitute materials.
5. Arms-abducted position of the torso suits the CT scanning.
6. The pulmonary vessels are spatially traceable.
7. Assessment of computer-aided detection systems is possible.

**“LUNGMAN” Training Skills**

1. CT scan training
2. Interpretation training
3. Assessment of computer-aided detection systems

**Specifications**

**Set Includes:**
- 1 multipurpose chest phantom
- Male body: synthetic bones are embedded
- Mediastinum: half size of human heart, trachea, pulmonary vessels (right and left) no internal structure
- Abdomen (diaphragm) block: no internal structure
- 5 simulated tumors (5 variations 1 piece each)
- 3 varieties of Hounsfield number: approx. -800, -630, +100
- 5 sizes for each type: diameters 0.3, 0.5, 0.8, 1.0, 1.2 cm
- 5 sizes for each type: diameters 0.12, 0.2, 0.32, 0.39, 0.47 in

**Size:**
- Phantom size: 43 x 20 x 48 cm, chest girth 94 cm
- Phantom weight: 18 kg /39.6 lb
- Packing size: 65 x 55 x 29 cm, 25 kg
- 26 x 22 x 11 in, 55.1 lb

**Computed tomography**

CT scan training Interpretation training Assessment of computer-aided detection systems

**Plain radiography**

Plain radiography Interpretation training Assessment of computer-aided detection systems

**Comparison**

Review the plain X-ray.

**Improve interpretation skills**

Comparison between Plain X-ray and CT, as well as between these images and the direct observation of the phantom, helps trainees to have three-dimensional understanding and to improve X-ray interpretation skills.
PH-S8
Subsolid Nodules Phantom
for PH-1 LUNGMAN (p.16) and CT Lung Phantom (p.30)
Both mixed and pure GGO are provided in variety of sizes and HU numbers.
Subsolid Nodules Phantom is a set of simulated lesions designed for study and training in Grand-Glass Opacity (GGO) detection and interpretation. Both mixed and pure GGO are provided in variety of sizes and HU numbers. The set also includes 3-D GGO modeled on clinical CT data. The simulated lesions can be attached to the pulmonary vessels of the Chest Phantom N1 “LUNGMAN” or in the CT Lung Phantom.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Diameter (cm)</th>
<th>HU</th>
<th>Type</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>1.5 x 0.59</td>
<td>-650</td>
<td>Concentric</td>
</tr>
<tr>
<td>2</td>
<td>0.5 x 0.20</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.0 x 0.79</td>
<td>-50</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>0.3 x 0.12</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>3.0 x 0.35</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0.5 x 0.20</td>
<td>8</td>
<td>Eccentric</td>
</tr>
<tr>
<td>7</td>
<td>1.5 x 0.59</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Optional and replacement parts for PH-1
41337-010 Chest Plates
41337-020 Storage Case
41337-030 Lungs of urethane
41337-040 Gallbladder RI container
41337-050 Pulmonary nodule RI container
41337-060 Mediastinum with left myocardium RI container

Simulated Tumors (standard set)
41392-000 No.1-7
41392-100 No.8-10
41392-200 No.11, 12
41392-300 No. a-h 3D GGO

The set of RI container inserts can be set in the chest phantom in place of standard inserts allowing wider research applications including PET/CT fusion evaluation.
The lungs of urethane foam can be worked easily to accommodate simulated nodules or other inserts.

PH-1C
Pediatric Chest Phantom
Imaging and dosimetry for radiosensitive 5-year-old
Chest X-ray is one of the most common examinations in pediatric radiography. This Pediatric Chest Phantom is designed to find out optimal parameters and protocols to minimize radiation exposure to children.
The phantom has two kinds of interchangeable lung inserts.
The lung vascular insert can be used to study image quality in relation to CT/X-ray protocols. The lung density insert allows users to evaluate dosage distribution in the lung field.

Features
1. Two types of interchangeable lung inserts are available.
   - Lung vascular insert and lung density insert.
2. Pencil-shaped ion chamber for CTDI can be set in the mediastinum.
3. TLD or RPL dosimeters can be set in the thyroid block and the lung density insert.
4. Lung vascular inserts with pulmonary vessels provide life-like radiographs.
5. Detachable internal structure allows insertion of variety of pathologies and targets.

Anatomies
Rib, clavicle, spine, mediastinum, scapula, sternum and *pulmonary vessel

Two types of lung inserts
1. Lung vascular insert only
2. Lung density insert

Applications
Pediatric Chest X-ray
Pediatric Chest CT
Dosimetry

Specifications
Set includes:
- 5-year-old chest torso
- main body: synthetic bones are embedded
- Thyroid block
- Lung vascular insert
- Lung density insert: mediastinum, lung fields (L・R)
- set of sample images
- Instruction manual

Size:
- Phantom size: 32 x 17 x 38 cm/12.6 x 6.7 x 15 in
- Weight: 6 kg/13.3 lb
LSCT001 is a unique phantom dedicated for optimizing lung cancer CT screening conditions for early cancer detection, as well as setting standard conditions across multiple systems or facilities for mass screening. Anthropomorphic structure of the phantom provides life-like images allowing operators visual evaluation. Quantitative evaluation on radiation dose and density curve of the image can be done simultaneously with a single scanning.

Features
1. Original human tissue substitute material creates life-like artifact under CT scanning.
2. Simulated GGO type tumors with different sizes and HU numbers are prepared in the vicinity of three main sections of bilateral lungs.
3. Dosimeter holder on the central axis of the phantom allows housing a pencil type ion chamber. 8-step cylindrical linearity phantom to control density curve as a scale can be attached to the chest phantom base.

Anatomies
- Synthetic bones with cartilage: artificial skull, vertebræ, clavicles, ribs, sternum, scapula, coxal bones, femurs
- Brain with cerebral ventricles
- Eye balls
- Lungs with pulmonary vessels
- Trachea (up to the third bifurcations)
- Lungs with pulmonary vessels
- Liver with portal and hepatic veins
- Kidneys, gallbladder, pancreas, spleen, aorta, cava, ureter, urinary bladder, prostate, rectum, sigmoid colon and ascites

Specifications
Set Includes:
1 chest phantom: life size torso with arm up position
1 internal structures: bones simulated tumors at three lung areas apical portion of the lungs bifurcation of the trachea base of lungs
1 dosimeter holder on the central axis of the phantom
1 8-step linearity phantom
1 adjustment base
1 storage case

Size:
- chest phantom chest girth 93 cm/36.6 in height 45 cm/17.7 in
- linearity phantom diameter 28 cm/11 in height 10 cm/3.9 in

PH-4 CT Torso Phantom CTU-41

A one-piece anthropomorphic torso phantom with anatomical structures allows various CT approaches including helical scanning.

Anatomies
- Synthetic bones with cartilage: artificial skull, vertebræ, clavicles, ribs, sternum, scapula, coxal bones, femurs
- Brain with cerebral ventricles
- Eye balls
- Lungs with pulmonary vessels
- Trachea (up to the third bifurcations)
- Liver with portal and hepatic veins
- Kidneys, gallbladder, pancreas, spleen, aorta, cava, ureter, urinary bladder, prostate, rectum, sigmoid colon and ascites

Specifications
Set Includes:
1 CT Torso Phantom: life size, male
1 storage case

Size:
- phantom height: 100 cm/39.4 in
- phantom weight: 45 kg/99 lb

106 x 58 x 62 cm
- packing size: 42 x 23 x 24 in
- packing weight: 52 kg/114 lb

PH-47, PH-62 Dental Radiography Head Phantom

1 removable jaws and tongue allow a variety of application for training and research.

Anatomies
- Synthetical skull with nasal cavity, maxillary sinus, mandible alveolar, and maxillary alveolar; cervical vertebrae and hyoid bone, teeth with enamel, dentin and pulp cavity.
- Tongue, oral cavity, maxillary sinus.
- Carotid arteries are prepared as lumens to accommodate simulated calcifications.

Specifications
Set Includes:
1 head phantom
1 storage case

Size:
- phantom height: 49 cm/19.3 in
- phantom weight: 9.5 kg/21 lb

PH-3 Angiographic CT Head Phantom ACS

Kyoto Kagaku’s best-selling CT head phantom.

Features
1. Contrast-enhanced left cerebral arteries are three dimensionally embedded in the brain.
2. Diameters of arteries range from 0.5 to 4.0 mm / 0.02 in to 0.16 in.

Anatomies
- Left anterior cerebral artery, left middle cerebral artery, cerebrum, mesencephalon, cerebellum, ventricles, eye balls, synthetical skull and cervical vertebrae (C1-C7).

Specifications
Set Includes:
1 head phantom
1 storage case

Size:
- packing size: 19.3 x 13 x 13.8 in
- packing weight: 9.5 kg/21 lb
**PH-5**
**CT Abdomen Phantom**

CT and ultrasound fusion experiments are possible with combination of the US-1 Echozy.

- **Anatomies**
  - lungs (non-internal structure)
  - heart (non-internal structure)
  - portal vein
  - gallbladder

- **Specifications**
  - Set includes:
    - 1 abdomen phantom
    - 1 storage case
  - Size:
    - phantom size: 25 x 19.2 x 21 cm
    - 9.8 x 7.5 x 8.3 in

---

**PH-19**
**Rotation Stomach Phantom TMP-R**

Rotational phantom to simulate double contrast gastroscopy.

- **Anatomies**
  - Organs:
    - Stomach, urinary bladder with simulated internal fluid, seminal vesicles and rectum.
    - L.4, L.5, pelvis and femurs (partial).
  - Lesions:
    - Sample model of lesions are included.
    - Pathology includes early cancer and gastric ulcer.
    - Barium can be poured in the stomach for imaging.
    - Life-size distended stomach with lesions modeled from real specimens.
  - Rotation system to simulate the movement of patient.

- **Features**
  - Cylindrical colon units with targets that represent polyps can be set at the position of ascending colon, descending colon and rectum in the life-size lower torso phantom.
  - Four types of colon units are included for evaluation. Each unit has six targets lining in sequence on the inner wall of the unit. Depressed types are to evaluate tumor detection sensitivity, and projection types can be used to evaluate volume measurement accuracy.
  - Depressed types are to evaluate tumor detection sensitivity, and projection types can be used to evaluate volume measurement accuracy.
  - Four types of colon units are included for evaluation. Each unit has six targets lining in sequence on the inner wall of the unit. Depressed types are to evaluate tumor detection sensitivity, and projection types can be used to evaluate volume measurement accuracy.

- **Applications**
  - Virtual colonography
  - Visualization and detection of targets
  - Study on optimal dose for low dose CT colonography
  - Evaluation of accuracy of measurement (size, volume)
  - Study on optimal density of contrast media
  - Study on optimal dose for low dose CT colonography
  - Virtual colonography

---

**PH-18**
**Stomach Phantom BMU-1**

Stomach phantom for double contrast gastroscopy.

- **Anatomies**
  - Organs:
    - Stomach, urinary bladder with simulated internal fluid, seminal vesicles and rectum.
    - L.4, L.5, pelvis and femurs (partial).
  - Lesions:
    - Sample model of lesions are included.

- **Specifications**
  - Set includes:
    - 1 stomach phantom
    - 1 storage case
  - Size:
    - phantom size: 30 x 20 x 33 cm
    - 11.8 x 7.9 x 13 in

---

**PH-46**
**CT Prostate Phantom**

Resourceful model for therapy planning for prostate cancer.

- **Anatomies**
  - Organs:
    - Prostate, bladder, urethra, seminal vesicles and rectum.
  - Anatomies:
    - Spine, pelvis, femurs

- **Features**
  - 1 prostate phantom
  - 1 phantom holder
  - 1 model of lesions
  - 1 storage case

- **Specifications**
  - Set includes:
    - 1 prostate phantom
    - 1 phantom holder
    - 1 model of lesions
    - 1 storage case
  - Size:
    - phantom size: 35 cm H/13.8 in H

---

**PH-49**
**CT Colonography Phantom NCCS**

Innovative study tool for safe and effective CT Colon screening

Virtual Colonoscopy with CT colonography is an invasive and demanding examination for patients and people who undergo screening for polyps. CT Colonography Phantom NCCS provides ideal tools to evaluate preparation, including tagging and cleansing, protocol for CT scanning, and software for interpretation.

- **Anatomies**
  - Spine, pelvis, femurs

- **Depressed type**
  - -2 variations-

- **Projection type**
  - -2 variations-

- **Applications**
  - Virtual Colonoscopy
  - Virtual Gross Pathology View
  - Air Image View
  - Virtual Endoscope View
  - Depressed I: circle targets with fixed diameter
  - Depressed II: circle targets with fixed height
  - Projection I: half-ellipsoid sphere targets with fixed diameter
  - Projection II: half-ellipsoid sphere targets with fixed ratio
  - Contrast agent can be poured into the colon units for tagging.
  - Pencil shaped ion chambers can be inserted in the center of the phantom for CTDI measurement.

- **Specifications**
  - Set includes:
    - 1 lower torso phantom
    - 3 plugs for colon unit hole
    - 1 plug for ion chamber hole
    - 4 types of colon units
    - 1 plug for ion chamber hole
    - 1 acrylic container
    - 1 storage case
Lumbar Spine Fluoroscopy Training Phantom
Ideal training tool for hands-on workshop
Lumbar Spine Fluoroscopy Training Phantom allows various training methods of fluoroscopy guided procedures in pain relief of the lumbar area. The phantom has two types of interchangeable and replaceable inserts with radio-opaque lumbar spine.

Features
1. Two types of replaceable training block
   - Vertebroplasty block and anesthesia block
2. Lumbar spine L2-L5 can be visualized under X-ray.
3. True-to-life resistance to the needle
Training Skills
- Recognition of fluoroscopic anatomy and landmarks
  - Spinal canal
  - Diaphragm
  - Heart with coronary arteries, including stenotic examples
Anatomies
- Lumbar spine (L2-L5)
- Spinal canal
- Epidural space (anesthesia block only)

Anesthesia Block
EP-2101
MOD-2000

Vertebroplasty Block
EP-2106
MOD-2004

Specifications
Set Includes:
1. drive unit
2. nodule rotation unit
3. diaphragm block
4. set of simulated tumors
5. controller
6. storage case

Replacement Parts:
1. lumbar torso
2. vertebroplasty block
3. anesthesia block
4. skin cover
5. syringe
6. irrigation bag
7. instruction manual
8. storage case

Evaluation Applications
- ECG gating cardiac CT
- Measurement of the left ventricle ejection fraction (EF)
- Beam pitch and image quality

Dynamic Heart and Lung Phantom
The motion of diaphragm and tumor, and the realistic heart motions provide various solutions for clinical research.

Features
1. The phantom represents movement of the heart, lungs and pulmonary nodule.
2. The pulmonary nodule and diaphragm moves independently with the respiratory cycle.
3. Three-dimensional movement of the pulmonary nodule (linearly and rotationally)
4. Motion disc represents respiratory movement of abdomen.
5. The elastic heart represents systolic and diastolic motion. The coronary arteries including stenotic examples are shown.
6. The phantom can be connected to ECG for ECG gating.

ECG-gated
Non ECG-gated

Anatomies
Synthetic bones of the chest
Heart with coronary artery
Pulmonary nodule, stenosis of coronary arteries

Pathologies
Pulmonary nodule, stenosis of coronary arteries

Applications
Respiratory gating chest CT
Tumor tracking in radiotherapy
ECG gating cardiac CT

Specifications
Set Includes:
1. drive unit
2. chest phantom
3. diaphragm block
4. set of simulated nodules
5. controller
6. storage case

Controlable Parameters:
- Heart rate: 30-120 beats/min
- Respiration rate: 6-24 cycles/min
- Pulmonary nodule movement: 0-64mm / 0-1.5 in
- Linear movement of nodule unit: 8-64mm / 0.5-2.5 in rotation of nodule unit: 30-70 degrees

Evaluation Applications
- Respiratory gating CT, doseimetry and radiation therapy

Dynamic Thorax Phantom
Anthropomorphic chest phantom for respiratory gating.

Features
1. TLD can be inserted to simulate the nodule
2. Six preset respiratory patterns are prepared
3. Respiratory patterns can be modified and saved
4. Up to three different respiratory patterns can be run in sequence

Specifications
Set Includes:
1. drive unit
2. chest phantom
3. diaphragm block
4. set of simulated tumors
5. controller
6. storage case

Controlable Parameters:
- Respiratory rate: 6-24 cycles/min
- Linear movement of nodule unit: 8-64mm / 0.5-2.5 in rotation of nodule unit: 30-70 degrees
- Heart phantom materials: polyurethane based resin
- HU value: approx.40
- ejection volume: approx.160 ml
- ejection fraction: 30-60%

Evaluation Applications
- Measurement of the left ventricle ejection fraction (EF)
- Image quality evaluation of coronary arteries

Dynamic Cardiac CT Phantom MD-CT
For evaluation and research in ECG gating cardiac and thoracic CT.

Anatomies
- Synthetic bones of the chest
- Heart with coronary artery
- Pulmonary nodule, stenosis of coronary arteries

Pathologies
- Pulmonary nodule, stenosis of coronary arteries

Applications
- Respiratory gating chest CT
- Tumor tracking in radiotherapy
- ECG gating cardiac CT

Specifications
Set Includes:
1. drive unit
2. chest phantom
3. diaphragm block
4. set of simulated nodules
5. controller
6. storage case

Controlable Parameters:
- Heart rate: 30-120 beats/min
- Respiration rate: 6-24 cycles/min
- Pulmonary nodule movement: 0-64mm / 0-1.5 in
- Linear movement of nodule unit: 8-64mm / 0.5-2.5 in rotation of nodule unit: 30-70 degrees

Evaluation Applications
- Measurement of the left ventricle ejection fraction (EF)
- Image quality evaluation of coronary arteries

Dynamic Phantoms
Tough Phantom Series
A stable, high quality and shatter-free phantom for radiotherapy.

**PH-40**
Tough Water Phantom WD

- **WD-3002** 300 x 300 x 2 mm / 12 x 12 x 0.08 in
- **WD-3003** 300 x 300 x 2 mm / 12 x 12 x 0.08 in
- **WD-3005** 300 x 300 x 2 mm / 12 x 12 x 0.12 in
- **WD-3010** 300 x 300 x 2 mm / 12 x 12 x 0.2 in
- **WD-3015** 300 x 300 x 2 mm / 12 x 12 x 0.3 in
- **WD-3020** 300 x 300 x 2 mm / 12 x 12 x 0.4 in
- **WD-3025** 300 x 300 x 2 mm / 12 x 12 x 0.6 in
- **WD-3030** 300 x 300 x 2 mm / 12 x 12 x 1.0 in
- **WD-3040** 300 x 300 x 2 mm / 12 x 12 x 1.2 in
- **WD-3050** 300 x 300 x 2 mm / 12 x 12 x 1.6 in
- **WD-3060** 300 x 300 x 2 mm / 12 x 12 x 2.0 in

**PH-37**
Therapy Body Phantom THRA-1

- **THRA-1** is an anthropomorphic, cross sectional dosimetry for therapeutic energy range.

**Specifications**

- Set includes:
  - 1 torso phantom
  - 1 supporting frame
  - 1 storage case

**PH-41**
Tough Bone Phantom BE-T, BE-H, BE-N

- **BE-T-2005** Compact Bone
- **BE-T-2010** Compact Bone
- **BE-T-2015** Compact Bone
- **BE-T-2020** Compact Bone
- **BE-H-2005** Cortical Bone
- **BE-H-2010** Cortical Bone
- **BE-H-2015** Cortical Bone
- **BE-H-2020** Cortical Bone
- **BE-N-2005** Inner Bone
- **BE-N-2010** Inner Bone
- **BE-N-2015** Inner Bone
- **BE-N-2020** Inner Bone

**PH-38**
Pediatric Therapy Body Phantom THRA-2

- **THRA-2** is an anthropomorphic, cross sectional dosimetry for therapeutic energy range.

**Specifications**

- Set includes:
  - 1 torso phantom
  - 1 supporting frame
  - 1 storage case

**PH-42**
Tough Lung Phantom LP

- **LP-3000** 300 x 300 x 30 cm / 12 x 12 x 12 in
- **LP-4000** 400 x 400 x 30 cm / 16 x 16 x 12 in

**Easy-to-work**
Tough series phantoms can be ordered with cavities and plugs.

**PH-31**
MRI Quality Assurance Phantom MHR

- **MHR** is a QA phantom for MRI allowing to evaluate the slice thickness, spatial resolution, uniformity and geometric distortion as well as contrast. Complies with NEMA standards.

**Specifications**

- **MHR**
  - Set includes:
    - 1 phantom unit A
    - 1 phantom unit B
    - 1 set of nickel chloride solution
    - 1 storage case

**PH-32**
MRI Quality Assurance Phantom MJR II

- **MJR II** is a QA phantom for MRI allowing to evaluate the slice thickness, spatial resolution, uniformity and geometric distortion as well as contrast. Complies with NEMA standards.

**Specifications**

- **MJR II**
  - Set includes:
    - 1 phantom unit A
    - 1 phantom unit B
    - 1 set of nickel chloride solution
    - 1 storage case

**ORINS Thyroid Phantom ITS**

- **ITS** is a QA phantom for MRI allowing to evaluate the slice thickness, spatial resolution, uniformity and geometric distortion as well as contrast. Complies with NEMA standards.

**Specifications**

- **ITS**
  - Set includes:
    - 1 phantom unit A
    - 1 phantom unit B
    - 1 set of nickel chloride solution
    - 1 storage case

**MRI / Nuclear Medicine**
PH-33 MRI Head Phantom NH
Life-size head phantom to assess uniformity.

Specifications
- Set includes:
  - 1 head phantom
  - 1 nickel chloride solution
  - 1 storage case

Conforming to JIS Z 4924

PH-53 Brain Phantom IB-20 advanced
This brain phantom of the striatal region with replicated skull densities of a male and female is useful for uptake ratio calibrations and studying the I-123 DaTSCAN scatter correction techniques.

Specifications
- Size: 13.5 x 18.5 cm / 5.3 x 7.3 in
- Height: 8.1 cm / 3.2 in

PH-24 Myocardial Phantom HL
For the study of high radio accumulation interference in the liver with the myocardial SPECT images.

Features
1. Allows the study of RI liver intake and its effect on the myocardial SPECT.
2. Cold defect can be set in the left cardiac muscle.
3. Background can be set individually in lung field, mediastinum and right ventricle.

Specifications
- Size: 32 x 22 x 31 cm
- 12.6 x 8.7 x 12.2 in

PH-27 Brain Phantom IB-10
A simulated skull section contains a brain slice. The brain comprises artificial grey and white matter, ventricular cavities and orbits. Radioactive solutions may be added to the phantom components. One version of the phantom contains geometrical test pieces.

Specifications
- Size: 33 cm height
- Inside dimensions: 13.5 x 18.5 cm / 5.3 x 7.3 in
- Height: 8.1 cm / 3.2 in

PH-34 MRI/NM Head Phantom BHC
Simulate life-size head images in nuclear medicine and MRI.

Specifications
- Set includes:
  - 1 head phantom
  - 2 simulated tumors (1 cm dia., 2 cm dia each)
  - 1 nickel chloride solution
  - 1 storage case

PH-29 ECT Hot Cold Phantom SP-6
Volumetric measurement phantom for PET/SPECT

Features
1. Five sphere containers with different sizes can be filled with RI solution.
2. Volume of sphere phantoms: 50 mm(2 in) [100%], 80%, 60%, 40% and 20%.

Specifications
- Set includes:
  - 1 outer phantom
  - 1 slice thickness phantom
  - 1 spatial resolution phantom
  - 1 bar phantom
  - 1 hot/cold spot phantom
  - 1 scatter radiation phantom
  - 1 phantom holder
  - 1 storage case

PH-33 MRI Head Phantom NH
Life-size head phantom to assess uniformity.

Specifications
- Set includes:
  - 1 head phantom
  - 1 nickel chloride solution
  - 1 storage case

PH-28 SPECT QA Phantom JSP
For daily quality control in SPECT and PET imaging

Specifications
- Conforming to JIS Z 4922

PH-30 SPECT QA Phantom JS-10
For daily quality control in SPECT and PET imaging

Specifications
- Set includes:
  - 1 outer phantom
  - 5 sphere phantoms
  - 1 storage case

Optional parts for PH-28 and PH-30 (Holder and accessories)

PH-27 Brain Phantom IB-10
A simulated skull section contains a brain slice. The brain comprises artificial grey and white matter, ventricular cavities and orbits. Radioactive solutions may be added to the phantom components. One version of the phantom contains geometrical test pieces.

Specifications
- Size: 33 cm height
- Inside dimensions: 13.5 x 18.5 cm / 5.3 x 7.3 in
- Height: 8.1 cm / 3.2 in

PH-33 MRI Head Phantom NH
Life-size head phantom to assess uniformity.

Specifications
- Set includes:
  - 1 head phantom
  - 1 nickel chloride solution
  - 1 storage case

PH-28 SPECT QA Phantom JSP
For daily quality control in SPECT and PET imaging

Specifications
- Conforming to JIS Z 4922

PH-30 SPECT QA Phantom JS-10
For daily quality control in SPECT and PET imaging

Specifications
- Set includes:
  - 1 outer phantom
  - 5 sphere phantoms
  - 1 storage case

Optional parts for PH-28 and PH-30 (Holder and accessories)
The phantom can be used for features of CT evaluation such as high and low contrast resolutions, feed direction and CTDI.

**PH-7 CT-AEC Phantoms**

Four types of phantoms designed to evaluate CT-AEC performance

Image quality can be evaluated by noise and S.D. on the phantom section images.

Four types of CT-AEC Phantoms:
- Cone Phantom: evaluates performance of AEC for different patient sizes and gradual size changes in size along the axis.
- Elliptical Cone Phantom: in combination with the Cone phantom, facilitates evaluation of XY AEC.
- Variable XY Phantom: evaluates performance of XY AEC as cross section changes from circular to elliptical.
- Stepped Phantom: evaluates the performance of the AEC to sudden changes in patient’s cross section.

**Features**

1. Non-aqueous/Easy Set-up enables liquid-free evaluation session.
2. Cone Phantom: evaluates performance of AEC for different patient sizes and gradual size changes in size along the axis.
3. Elliptical Cone Phantom: in combination with the Cone phantom, facilitates evaluation of XY AEC.
4. Variable XY Phantom: evaluates performance of XY AEC as cross section changes from circular to elliptical.
5. Stepped Phantom: evaluates the performance of the AEC to sudden changes in patient’s cross section.

**Specifications**

- Set includes:
  - 1 breast phantom
  - 1 lung area
  - 1 storage case

**PH-22 CT Lung Phantom**

12 features of evaluation to cover recommendation of Japanese Committee

11 features of CT evaluation are possible by using interchangeable measurement units. Conforming to second recommendation of Japanese Committee for Evaluating Performance of CT Scanners.

**Features**

- 1. Simulated airways and vessels are embedded in the lung tissue substitute.
- 2. Nine variations of vessel width are prepared:
  - Simulated airways 3-14 mm dia.
  - Simulated vessels 2-14 mm dia.
- 3. Ladder Phantom is used to study in axial variation such as slice thickness effect.
- 4. Image distortion can be assessed.

**Specifications**

- Set includes:
  - 1 CT lung phantom
  - 9 ladder phantoms
  - 1 storage case

**PH-9-2 Ladder Phantom**

The phantom with simulated vessels to evaluate spatial resolution in CT.

**Features**

1. On each plate phantom of 5 mm thickness, five slits of 5 mm length are made to represent vessels.
2. Nine variations of vessel width are prepared:
   - 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 1.0, 1.2, 1.5 mm.
   - 0.012, 0.016, 0.024, 0.028, 0.032, 0.039, 0.047, 0.059 in

**Specifications**

- Set includes:
  - 1 outer phantom
  - 9 ladder phantoms
  - 1 storage case
PH-10
BMD Chart Phantom UHA
Bone Mineral Density chart for microdensitometry (MD) method.

Features
1. 21 steps with different hydroxyapatite content.
2. Steps range from 0 to 400 mg/cm², with 20mg/cm² difference each.

Specifications
Set includes:
1. Chart phantom
1. Storage case

Size:
3 x 21 x 1.5 cm (consists of 21 blocks of 3 x 1 x 1.5 cm each)
12 x 8.3 x 0.6 in (consists of 21 blocks of 8.3 x 0.4 x 0.6 in each)

PH-16
Contrast Detail Phantom
Image evaluation in plain X-ray

Features
Four types of phantoms with different sizes and target types.
- Rod 15: 15 x 15 rods of height range from 1.0 to 8.0 mm (0.4 to 3.1 in)
- Hole 15: 15 x 15 holes of depth range from 1.0 to 8.0 mm (0.4 to 3.1 in)
- Rod 10: 10 x 10 rods of height range from 1.0 to 5.5 mm (0.4 to 2.2 in)
- Hole 10: 10 x 10 holes of depth range from 1.0 to 5.5 mm (0.4 to 2.2 in)

Specifications
Size:
Rod: Rod 15 and Hole 15: 24.5 x 24.5 cm each (9.6 x 9.6 in each)
Rod 10 and Hole 10: 17 x 17 cm each (6.7 x 6.7 in each)

PH-17
Water Body Phantom WAC
Water Body Phantom represents human chest and abdomen to serve as radiation absorber and scatterer.

Confirming to JIS Z 4915

Specifications
Set includes:
1. Body phantom
1. Storage case

Size:
30 x 20 x 45 cm
11.8 x 7.9 x 17.7 in

PH-14
Acrylic Phantom XAC
Slab phantoms for radiation absorption and scattering measurement.

XAC-01 41430-000 30 x 30 x 0.1 cm/11.8 x 11.8 x 0.04 in
XAC-02 41431-000 30 x 30 x 0.2 cm/11.8 x 11.8 x 0.08 in
XAC-03 41432-000 30 x 30 x 0.3 cm/11.8 x 11.8 x 0.12 in
XAC-04 41433-000 30 x 30 x 0.4 cm/11.8 x 11.8 x 0.16 in
XAC-05 41434-000 30 x 30 x 0.5 cm/11.8 x 11.8 x 0.2 in
XAC-06 41435-000 30 x 30 x 0.8 cm/11.8 x 11.8 x 0.32 in
XAC-07 41436-000 30 x 30 x 1 cm/11.8 x 11.8 x 0.4 in
XAC-08 41437-000 30 x 30 x 1.2 cm/11.8 x 11.8 x 0.48 in
XAC-09 41438-000 30 x 30 x 1.5 cm/11.8 x 11.8 x 0.72 in
XAC-10 41439-000 30 x 30 x 2 cm/11.8 x 11.8 x 0.8 in
XAC-11 41440-000 30 x 30 x 3 cm/11.8 x 11.8 x 1.2 in
XAC-12 41441-000 30 x 30 x 4 cm/11.8 x 11.8 x 1.6 in
XAC-13 41442-000 30 x 30 x 5 cm/11.8 x 11.8 x 2 in
XAC-14 41443-000 30 x 30 x 8 cm/11.8 x 11.8 x 3.2 in
XAC-15 41444-000 30 x 30 x 10 cm/11.8 x 11.8 x 3.9 in

US-1
Ultrasound Examination Training Phantom
“ECHOZY”
Abdominal ultrasound phantom without pathologies

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 provide wider range in training.

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

Anatomies
- 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.)

Specifications
Phantom Size:
9 x 8 x 11 in

Set variations:
US-1 (41900-000)*“ECHOZY” full set
1 ultrasound phantom “ECHOZY”
1 anatomical model “ECHO-ZOU”
1 set positioning pillows
1 storage case

US-1B (41900-030)*“ABDFAN” full set
1 ultrasound phantom “ABDFAN”
1 anatomical model “ECHO-ZOU”
1 set positioning pillows
1 tutorial manual (DVD)
1 storage case

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

Ultrasound Phantoms
Ultrasound Phantoms

**FAST/Acute Abdomen Phantom “FAST/ER FAN”**
Best tool for workshops in emergency ultrasound

FAST/ER FAN provides training to detect the presence of free intraperitoneal or pericardial fluid in patients experiencing trauma.

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

**Anatomies and Pathologies**
- Cardiac Tamponade
- Right Upper Abdominal Bleeding
- Pelvic Bleeding
- Pleural Hemorrhage
- Hydronephrosis
- Appendicitis
- Cyst Malignant Tumor

**Specifications**
Set Includes:
- 1 ultrasound phantom
- 1 storage case
- 1 tutorial manual (DVD)

Size:
41 x 15 x 15 cm
16 x 6 x 6 in

**US-8**
Pediatric FAST/Acute Abdomen Phantom
The world’s first pediatric ultrasound torso phantom

This abdominal ultrasound phantom includes life-size anatomies of a 2 years old with internal hemorrhage and other conditions commonly found in acute pediatric patients.

**Features**
1. The phantom includes life-size 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.

**Anatomies and Pathologies**
- Appendicitis
- Pleural Hemorrhage
- Right Upper Abdominal Bleeding
- Pelvic Bleeding
- Hydronephrosis

**Specifications**
Set Includes:
- 1 ultrasound phantom
- 1 storage case
- 1 tutorial manual (DVD)

Size:
62 x 30 x 24 cm
21 x 12 x 9 in

**US-7 α**
Fetus Ultrasound Examination Phantom “SPACE FAN-ST”
Fetus ultrasound phantom with a full skeletal structure

SPACEFAN-ST provides high quality training for second trimester screening. A 23-week fetus is included with detailed anatomies which are essential for the assessment at the period.

**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 position
- Assessment of each body part
  - Head: skull and brain
  - Spine and limbs
  - Cardiac chambers, blood vessels, and lungs
  - Assessment of umbilical cord and placenta
  - Determination of sex (fetus is a male)

**Anatomies and Pathologies**
**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

**Early Abdominal Bleeding**

**Appendicitis**

**Trainings Skills**
- State-of-the-art breast phantom with ultrasound anatomy
- Skills required for ultrasound breast screening can be greatly advanced with practice.

**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 cyst and tumors

**Anatomies**
Subcutaneous adipose, mammary gland, galactophore, Cooper’s ligament, retromammary adipose, costae, clavicle, pectoralis major, lung, and lymph nodes at axilla.

**Pathologies**
Cyst, mammary ductal ectasia, malignant tumor, benign tumor

**US-6**
Breast Ultrasound Examination Phantom “BREAST FAN”
Training in ultrasound breast cancer screening with detailed anatomy

BREASTFAN is a unique phantom for training in basic breast ultrasound examination. Simulated targets with different echogenicities are embedded in the mammary gland.

**Features**
1. State-of-the-art breast phantom with ultrasound anatomy
2. Skills required for ultrasound breast screening can be greatly advanced with practice.

**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 cyst and tumors

**Anatomies**
Subcutaneous adipose, mammary gland, galactophore, Cooper’s ligament, retromammary adipose, costae, clavicle, pectoralis major, lung, and lymph nodes at axilla.

**Pathologies**
Cyst, mammary ductal ectasia, malignant tumor, benign tumor

**Specifications**
Set Includes:
- 1 breast phantom
- 1 storage case
- 1 tutorial manual (DVD)

Size:
26 x 38 x 11 cm
7.6 x 8.8 x 2.8 in
**US-3 Abdominal Intraoperative & Laparoscopic Ultrasound Phantom “IOUS FAN”**

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 (hypoechogenic, hyperechogenic 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

**Anatomies**
- 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:
- Upper abdomen ultrasound phantom
- Stomach ultrasound phantom
- Abdominal phantom container
- Tutorial manual (DVD)

**US-13 Infant Hip Sonography Training Phantom**

Best tool to teach Graf’s method

**Features**
1. The market’s only 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 II),
   - 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

**Anatomies**
- Femoral head
- Bony rim
- Hyaline cartilage preformed acetabular roof
- Lower limb of os ilium
- Cartilage acetabular roof
- Labrum

**Specifications**
Set includes:
- Lower torso manikin
- Instruction manual
- Storage case

**US-10 Female Pelvic Ultrasound Phantom**

Female pelvic phantom with 2 screening methods

**Features**
1. Realistic pathology for transvaginal ultrasound training as well as transabdominal procedure
2. Excellent ultrasound image quality
3. Anatomically correct and life-like images
4. Compatible with any ultrasound machine
5. 2 kinds of exchangeable phantoms for differing pathologies

**Training Skills**
- Transvaginal and transabdominal screenings
- Localization of pathologies
- 3D ultrasound imaging restructuring

**Anatomies and Pathologies**
- Visualization of standard, anterior and posterior planes
- Localization of pathologies
- 3D ultrasound image restructuring

**Specifications**
Set includes:
- Lower torso manikin
- Instruction manual
- Storage case

**US-11 Scrotal Ultrasound Phantom**

Excellent visualization of scrotal phantom

The two phantoms, normal and pathological, facilitate a thorough anatomical understanding as well as a clear visualization of scrotal pathologies.

**Features**
1. Excellent ultrasound image quality
2. Normal and pathological unit provides differing case types
3. Exchangeable scrotal phantoms with easy cleaning

**Anatomies and Pathologies**
- Visualization of testicular cancer

**Specifications**
Set includes:
- Lower torso manikin
- Instruction manual
- Storage case

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36 Ultrasound Phantoms
US-9 Ultrasound Guided Breast Biopsy Phantom
Provides step by training in ultrasound guided breast biopsy

Features
1. Compatible for FNAB, CBB and mammomate biopsy with ultrasound guidance.
2. Many targets are included in these levels.
3. Realistic representation of the mammary gland
4. An inexpensive and disposable phantom that provides many numbers of trials.
5. The opaque phantom includes 2 types of targets: Hyperechoic and Hypoechoic.

Training Skills
- Hands-eye coordination in ultrasound biopsy
- Localization of targets under ultrasound guidance
- Sampling of target

Specifications
Set includes:
1 storage case
1 phantom

Set includes:
5.
4.
3.
2.
1.

US-2 Ultrasound Quality Assurance Phantom
Durable and stable.

N-365 Multipurpose Phantom
Ensure highly detailed images to ensure reliable breast cancer examinations

Specifications
Set includes:
1 phantom
1 storage case
Phantom size:
19.2 x 7.7 x 7.7 cm
W7.6 x D8.8 x H2.8 in

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 slopes 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.

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

M93C
CVC Insertion Simulator III
CVC Insertion Simulator III provides training in a sequence of procedural skills from the needle insertion to catheter placement, including Seldinger technique.

Features
1. Repeated insertion:
   Improved 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
   Anatomically correct structure facilitates training in both landmark and ultrasound-guided CVC.
3. Mechanical complications, such as arterial puncture and pneumothorax can be simulated for training.
4. New Material
   Close to human tissue material of the pad provides true-to-life sensation to the catheter.
5. Realistic venous collapse

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

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

Specifications
Set includes:
2 CVC placement pads
2 vein slips
2 artery tubes
1 instruction manual

US-4 Breast Ultrasound QA Phantom

Features
1. Four kinds of targets, gray scale, cyst targets, dot targets and 45 degrees line target at 2 different depth, 10mm (0.4 in) and 20mm (0.8 in).
2. Background of each phantom block is of different attenuation rate and speed of sound.
3. Detailed spatial resolution as minute as 0.5mm (0.02 in) can be assessed.
4. Comes with a Thermometer to measure inner temperature of the phantom.

Specifications
Set includes:
1 blue coloring powder
1 red coloring powder
1 transparent anatomical block
1 landmarks puncture pad
1 vein pipe
1 vein tubes
1 skin for cannulation training
1 anatomy block
1 phantom block
2 CVC placement pads
1 instruction manual

M93UB
CVC Insertion Simulator II
Great practice simulator for CVC catheter insertion with a variety of methods

Features
1. CVC Insertion Simulator II offers training in both landmark and ultrasound-guided central venous catheterization.
2. Landmark puncture pad with anatomically correct vein bifurcations simulates mechanical complications including pneumothorax, mislodging and artery puncture.
3. Introductory ultrasound training block to acquire basics of ultrasound-guided venous access.
4. Transparent anatomical block for anatomical understanding and guide wire manipulation.
5. Both internal jugular and subclavian (axillary) veins are accessible.

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

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

Specifications
Set includes:
1 instruction manual
2 CVC placement pads
2 vein slips
2 artery tubes

Ultrasound Phantoms Ultrasound Phantoms
Ultrasound-Compatible Lumbar Puncture/Epidural Simulator

Ultrasonic anatomy and needle access training

Ultrasound compatible puncture block is anatomically correct and offers realistic image of ultrasound. Both epidural space and subarachnoid space are accessible for training.

Features

1. Ultrasound landmarks of lumbar spine can be visualized.
2. Skin cover allows marking with a pen.
3. Both upright and lateral positions are possible for training.
4. Translucent blocks allow users to see the needle pathway under direct vision.

Training Skills

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

Anatomies

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

Specifications

Set includes:
- 1 male upper torso with the right arm
- 1 lumbar region model
- 1 epidural/lumbar region model
- 1 lumbar skin cover
- 1 image guide bar/ huber support
- 1 image guide bar/ huber support
- 1 syringe

PH-2B CT Whole Body Phantom “PBU-60”


Read more: http://www.i-j-t.org/ac.st/index.php/journal/article/view/107

PH-2C Pediatric Whole Body Phantom “PBU-70”


Read more: http://dx.doi.org/10.1117/12.2010164

PH-1 Multipurpose Chest Phantom N1 “Lungman”


Read more: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3817707/


Read more: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3213283/


Read more: http://proceedings.netkey.at/viewing/index.php?module=viewing_poster&pi=105274


Read more: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3408807/


Read More: http://www.ajr.com/article/doi/10.2214/ajr.08.5108


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

- Advancing of the cannula into the SVC
- The Seldinger technique
- Finding a puncture site under ultrasound guidance
- Needle insertion, manipulation of the PICC to the placement of successful venous access
- Ultrasound guided venous access
- Excellent image quality and visualization of the needle tip for ultrasound guided venous access
- CSF collection and CSF pressure measurement
- Ultrasound compatible puncture block is anatomically correct and offers realistic image of ultrasound. Both epidural space and subarachnoid space are accessible for training.

Anatomies

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

Specifications

Set includes:
- 1 lumbar region model
- 1 epidural/lumbar region model
- 1 lumbar skin cover
- 1 image guide bar/ huber support
- 1 syringe

Replacement parts:
- (11384-790) 1 ultrasound lumbar puncture/epidural block
- (11384-230) 1 ultrasound lumbar region skin cover for IME

Manikin Size

33 x 27 x 30 cm
W19 x O36 x H11.8 in

Publication References

PH-8 Lung Cancer Screening Phantom LSCT 001


Read more: http://www.ncbi.nlm.nih.gov/pubmed/23794901

PH-47 Dental Radiography Head Phantom


PH-48 Dynamic Heart and Lung Phantom


PH-46 Dynamic Cardiac CT Phantom


PH-7 CT-AEC Phantoms


US-2 Ultrasound Quality Assurance Phantoms

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

US-4 Breast Ultrasound QA Phantom

Custom Orders example

Let us know your thoughts
We believe in the importance of providing phantoms that meet your needs and listening to your voice to find a solution. If you would like to suggest any additional features for our phantoms, please do not hesitate to contact Kyoto Kagaku Co., Ltd. Innovation is our tradition.

Product Supervision

P16
PH-1 Multipurpose Chest Phantom N1 “LUNGMAN”
Kiyoshi Murata, Ph.D., Professor
Norihisa Nitta, Ph.D., D.D.S., Ph.D.
Shiga University of Medical Science

P20
PH-47, PH-62 Dental Radiography Head Phantom
Akitoshi Katsumata, D.D.S., Ph.D.
Aoi University, School of Dentistry

P22
PH-49 CT Colonography Phantom NCCS
National Cancer Center (Japan)

P23
PH-51 Lumbar Spine Fluoroscopy Training Phantom
Dr. David Wilson MBBS, BSc, MSEM, FRCP, FRCR
Consultant Radiologist St Luke’s Hospital Oxford
Senior Clinical Lecturer University of Oxford

P32
US-1 Ultrasound Examination Training Phantom
“ECHOZY”
Dr. Hitoshi Asai, Director
Osaka Kyoiku University, Health Administration Center
Dr. Shigeru Nakamura
Nagoya City Hospital, Clinical Examination Department

P32
US-1B Ultrasound Examination Training Phantom
“ABDFAN”
Junji Machi, MD, PhD
University of Hawaii at Manoa and Kuakini Medical Center

P33
US-5 FAST/Acute Abdomen Phantom
“FAST/ER FAN”
Junji Machi, MD, PhD
University of Hawaii at Manoa and Kuakini Medical Center

P33
US-6 Breast Ultrasound Examination Phantom
“BREAST FAN”
Tokeki Emoto, MD, PhD
Director of Department of Advanced Diagnosis, Clinical Research Center,
National Hospital Organization Nagoya Medical Center
Director of Department of Radiology,
National Hospital Organization Nagoya Medical Center

P35
US-3 Abdominal Intraoperative & Laparoscopic Ultrasound Phantom
“IOUS FAN”
Junji Machi, MD, PhD
University of Hawaii at Manoa and Kuakini Medical Center

P35
US-13 Infant Hip Sonography Training Phantom
Univ. Prof., Prof. hc. Reinhard Graf, M.D.

P36
US-10 Female Pelvic Ultrasound Phantom
Chair & Professor - Sonography Department
Adventist University of Health Sciences

P36
US-11 Scrotal Ultrasound Phantom
Chair & Professor - Sonography Department
Adventist University of Health Sciences

P37
US-4 Breast Ultrasound QA Phantom
Japan Association of Breast and Thyroid Sonology, Quality Assurance Committee Working Team.
Recommendation from:
Japan Radiology Society, Imaging Committee
Breast Imaging Group

P38
M93UB CVC Insertion Simulator II
Masahito Tanaka, 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
Graduate School of Human Science Chiba University
Masanori Hoki, M.D., Ph.D., Professor Department of Human Dietetics
Graduate School of Human Science Chiba University
John Toolum, M.D., Ph.D., Department of Anesthesiology, Kawasaki Chiba Hospital

Common Specifications

All KYOTO KAGAKU phantoms are made in Japan
All KYOTO KAGAKU phantoms are latex free

Tissue substitute materials: polyurethane based resin
Synthetic bones: epoxy based resin
PH-6, PH-43

PH-7, PH-14, PH-17, PH-24, PH-28, PH-29, PH-21, PH-31, PH-34
Acrylic resin
Synthetic bones: epoxy based resin
PH-13
Acrylic resin, nylon, aluminum, aluminum oxide, Teflon
PH-40
 Phenolic based resin
PH-6, PH-45

PH-40
Phenolic based resin

PH-40
Acrylic resin, nylon, aluminum, aluminum oxide, Teflon

PH-8, PH-10, PH-15
Polymethyl methacrylate
PH-37, PH-40, PH-41
Epoxy based resin
PH-9-2
Epoxy based resin, acrylic resin

Specifications printed in this catalogue are of the time of printing. Since products are continuously improved and updated, specifications are subject to change without prior notice.
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