

Caution:

Don't mark on the phantom with pen or leave printed materials contacted on its surface.
Ink marks on the phantom will be irremovable.

PH-2C

Pediatric Whole Body Phantom

"PBU-70"

**Instruction
Manual**

Contents

- Please read before training
 - General information P.1 ~ P. 3
- Preparation
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Movie Site



English Site

Pediatric whole body phantom PBU-70

The Pediatric Whole Body Phantom is modeled after a 5-year-old child of 42" (110 cm) tall. This phantom is a life-size, full body anthropomorphic phantom with a state-of-the-art synthetic skeleton, lungs, liver, mediastinum and kidneys embedded in KYOTOKAGAKU original soft tissue substitute.

There are no metal parts that would impair realistic imaging. The joints, knees, elbows, shoulders and hip-joints, are flexible and able to maintain the necessary positions. The phantom is separable into 10 parts facilitating a variety of application. A positioning stand for the head part comes with the set.

Specifications

Pediatric whole body phantom PBU-70

Intended application: Positioning phantom for plain radiography

Length: approx.110cm

Weight: approx. 20kg

Can be dismantled at: shoulders elbows, hip joints, knees, neck

Embedded organs: lungs with vessels, heart, liver and kidneys

* The product has two 3mm dia holes made in the chest wall to prevent the damage caused by atmospheric pressure change that may occur in transit.

Movable joints and their range of movement

Shoulders: rotate 360 degrees to backward and forward,180 degrees side-ways

Cubital joints (bilateral): bend inward up to 90 degree

Coxae (bilateral): rotate forward up to 90 degrees, then rotate outward up to 90 degrees each.

Articulatio genus (bilateral): bend up to 90 degrees.

Material: Human tissue substitute (urethane,epoxy,etc.,)

Accessory: Positioning head stand 1 piece

Screwdriver 1 set

Sample images 1 set

Hand positioning belt 1 piece

Replacement parts: screws and connection tape for patella.

HU numbers of each organ:

liver 70

kidney 30

* The Hounsfield numbers shown above are approximate figures of the calculated values and not actual measurement values.



Please note

- 1) Bone trabeculae are observed only at hands.
- 2) Contours of the bones are slightly enhanced than actual human x-ray image, to facilitate clear understanding.
- 3) Basically, the phantom is designed to be radiographed under same setting as human body, though, the joints areas may require some adjustment to have better image.

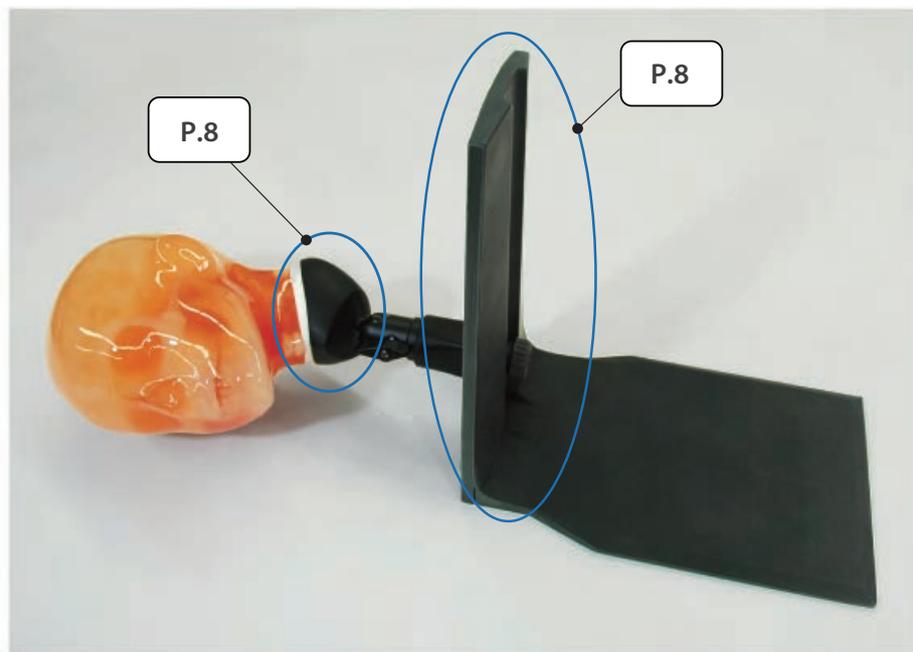
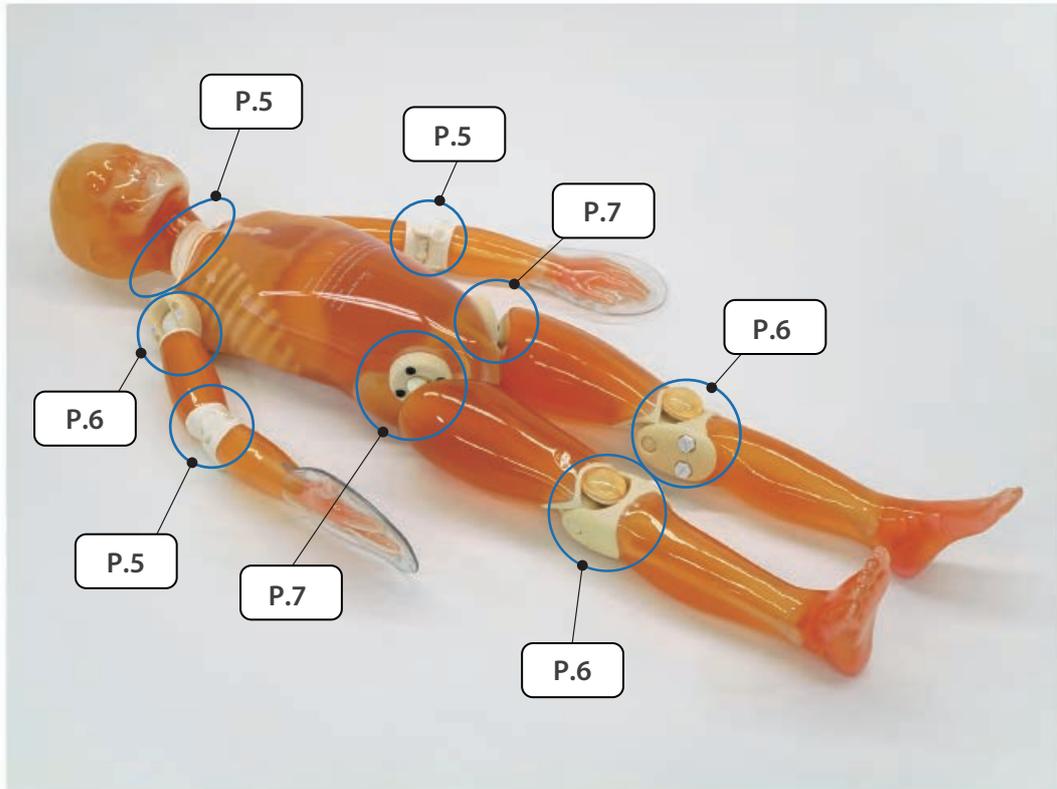


Caution

- 1) Do not make the phantom take the position unintended by the manufacturer. It may cause the breakage in the phantom if the joints are forced to bend or rotate to the directions or degrees of angles outside of designed movable range.
- 2) Do not take off the plastic protector attached to the hands. The protector prevents breakage in the phantom fingers.
- 3) Do not carry the phantom while it is assembled. Detach the joints before transportation to avoid the excessive force on the joints.
- 4) When the training with the phantom is not made for a while, pay attention to storage condition (posture) of the phantom so as to avoid the burden to the connection area. For example, condition the head has been resting on the pillow for a while can cause the breakage to the neck connection area.
- 5) Do not fasten the screws too tight.
- 6) The phantom is heavy and could cause damage not only to itself but to people or other objects. When you need to handle the assembled phantom, always do it by two or more people with utmost care.
- 7) Don't mark on the phantom with pen or leave printed materials contacted on its surface. Ink marks on the phantom will be irremovable.

PBU-70 Components

Parts #	Parts name	QTY	Parts #	Parts name	QTY
1	Head	1	21	Connector for left hip joint	1
2	Neck-head connection plate	1	22	Connector for right knee	1
3	Trunk	1	23	Connector for left knee	1
4	Right upper arm	1	24	Screw bolt for neck connection M12×20	2
5	Left upper arm	1	25	Screw bolt for neck connection M8×15	2
6	Right forearm	1	26	Screw bolt for shoulder connection M6×10	4
7	Left forearm	1	27	Screw bolt for elbow joint M6×40	4
8	Right thigh	1	28	Screw nut for elbow joint M6	4
9	Left thigh	1	29	Screw bolt for hip joint M6×15 M6×20	4 2
10	Right lower leg	1	30	Screw bolt for knee joint M10×15	4
11	Left lower leg	1	31	Connection tape for the patellae	2
12	Right patella	1	32	Height adjustment panel	1
13	Left patella	1	33	Base panel	1
14	Connector for right shoulder	1	34	Neck connector	1
15	Connector for left shoulder	1	35	Neck connector fixture	1
16	Connector for right elbow (exterior)	1	36	Screw for fixture M6×18	1
17	Connector for right elbow (interior)	1	37	Screw bolt	2
18	Connector for left elbow (exterior)	1	38	Hand positioning belt	1
19	Connector for left elbow (interior)	1			
20	Connector for right hip joint	1			



The numbers indicated on the photos above correspond to the page numbers in this manual.

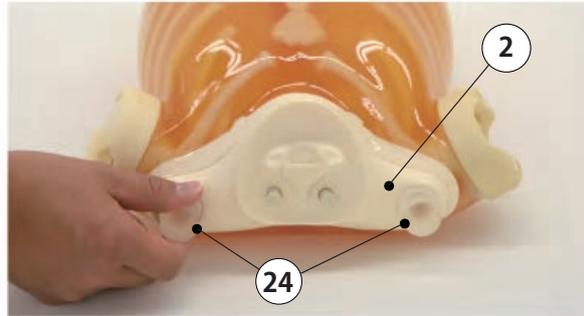
Assembly Manual

※ The circled numbers in the assembly images are parts numbers on the components table on page 3.

< NECK AND HEAD >

1. Take off the neck head connection plate (part # 2) from the trunk.

24 Screw bolt for neck connection M12×20×2

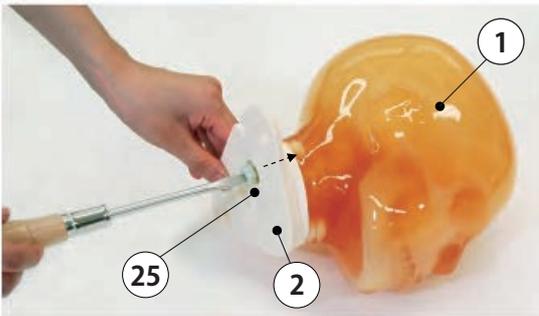


2. Screw the neck head connection plate (part # 2) on the head (part #1) and mount the assembled parts to the trunk.

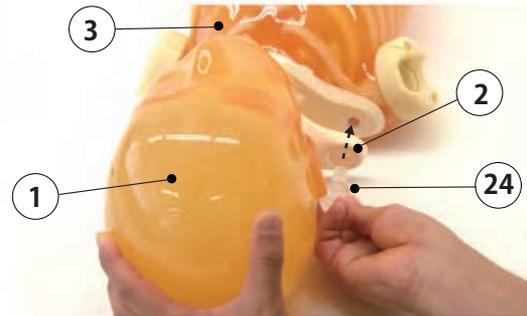


25 Screw bolt for neck connection M8×15×2

【 Neck sub-assembly 】



【 Connection of the head and the trunk 】



< ELBOWS >

The elbow joint is connected at the time of delivery. To separate the parts, please see the following instructions.

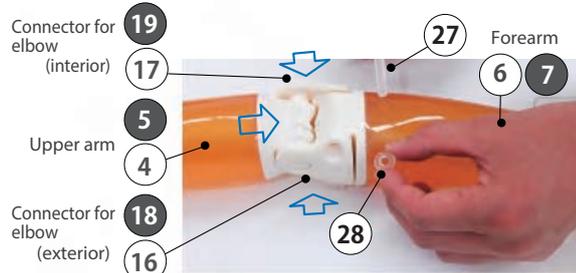
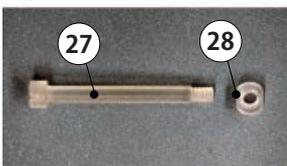


< ELBOWS >

Put upper arm parts (part #4 or 5) and forearm parts (part #6 or 7) together at joint section. Fix these parts with elbow connectors (part #16 or 18 and #17 or 19) from both outsides and inside.

27 Screw bolt for elbow joint M 6×40×4

28 Screw nut for elbow joint M 6×4



Assembly Manual

< SHOULDERS >

Take off the external shoulder connector parts (part #14 or 15) from the trunk. Then attach the upper arms (part #4 or 5) holding the ball joints with connectors.

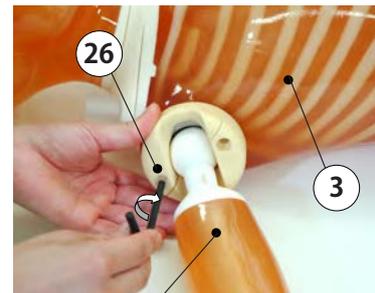
※ Be careful not to mix up part #4 and 5. The shapes of right and left arms are different.

Connector for shoulder (14) (15)



Upper arm (5) (4)

(26) Screw bolt for shoulder connection M6x10x4



(5) (4)

< KNEES >

1. Connect the thigh (#8, 9) and lower leg (#10, 11) with the knee joint. Insert the dowel of the upper thigh through the hole of knee joint of lower thigh. Set the Connector for knee (#22, 23) to the inside of knee then screw the knee joint bolt (#30) to fix it. Then insert the connection tape of the patella to the guide aperture of the thigh.

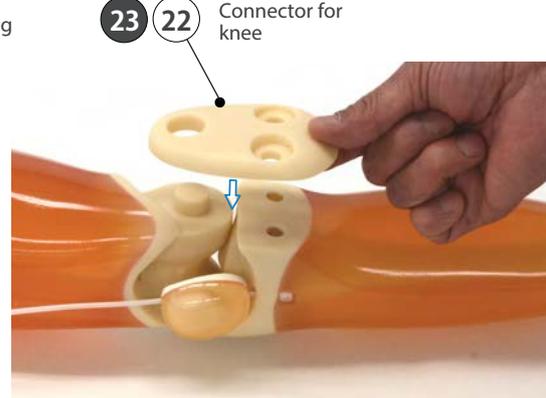
(30) Screw bolt for knee joint M10x15x4



(9) (8) Thigh

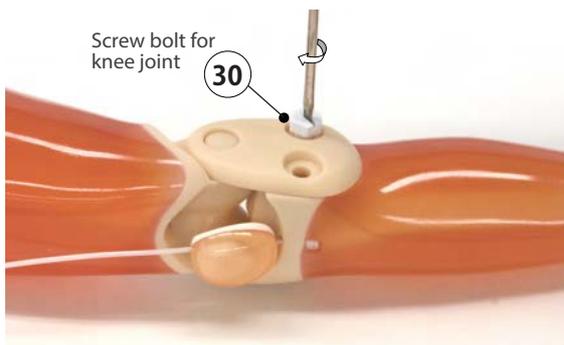


(11) (10) Lower leg



(23) (22) Connector for knee

Insert the dowel of the upper thigh through the hole of the knee joint of lower leg.



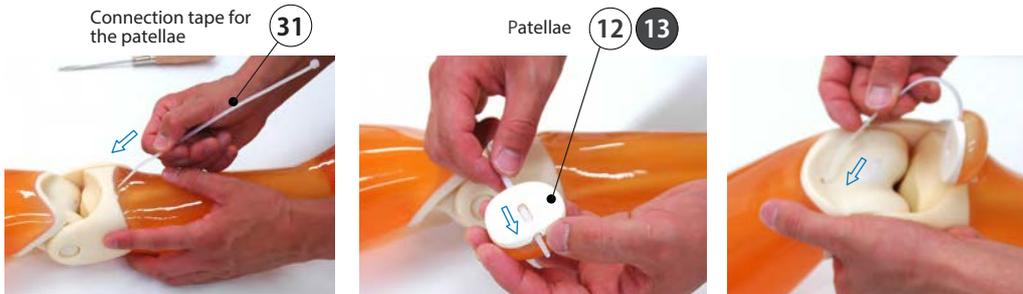
Screw bolt for knee joint (30)



Assembly Manual

Follow the instructions below to exchange the tape used to attach the patella.

Insert the connection tape for the patellae (part#31) to the hole of lower leg (part# 10, 11). Then insert the tape to the 2 guide apertures of the patella. After fixing the patella, bend the knee and insert the connection tape of the patella to the guide aperture of the thigh.

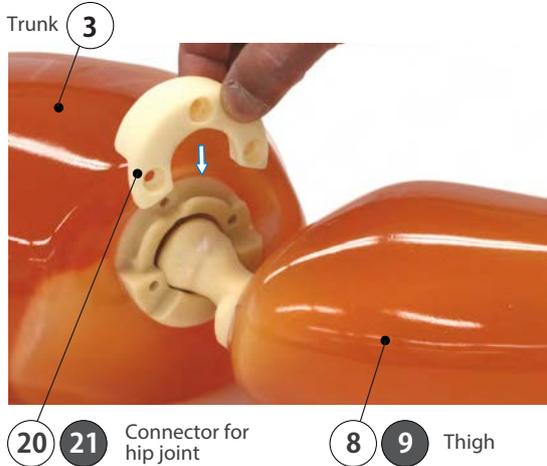


There are indication of L (left) or R (right) in the backside to the left and right patellae.

< HIP JOINTS >

1. Mount the thighs (part# 8, 9) so that the femur head fits into the hip sockets. Hold in place and attach the hip joint connector (part# 20, 21) with the screw bolts (part# 29). Use the longer bolt for the middle hole, and the 2 shorter bolts for the left and right holes. Be careful not to confuse parts for left and for right.

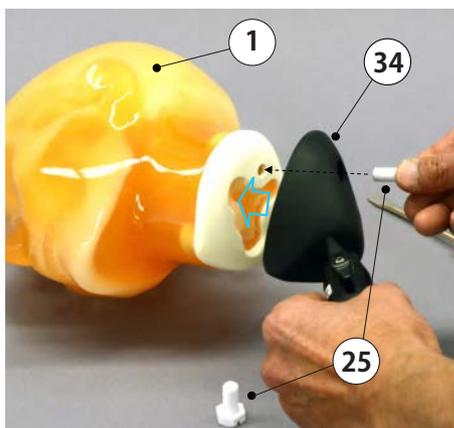
- (29) Screw bolt for hip joint
M6 × 20 × 2
M6 × 15 × 4



Assembly Manual

< HEAD AND STAND >

1. Mount the head phantom to the neck connector and fix it with two screws.



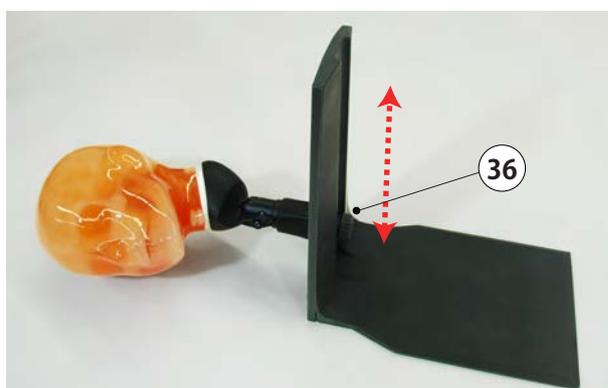
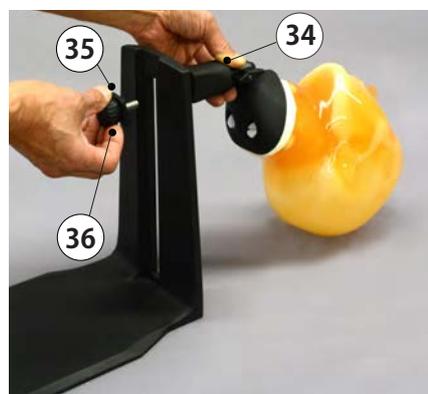
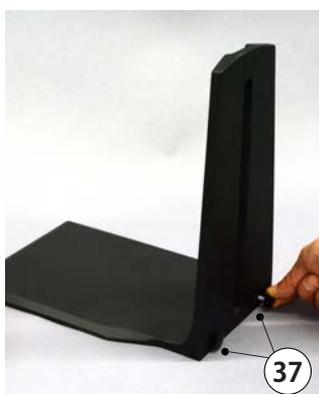
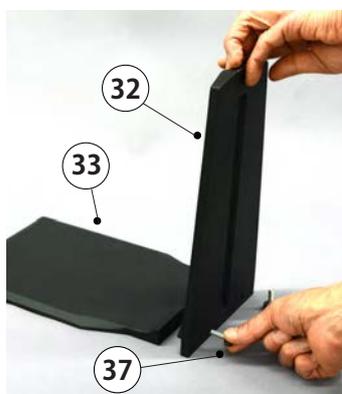
25 Screw bolt for neck connection M8×15×2



37 Screw bolt M6×18×2

2. Next assemble the two panels. Attach the height adjustment panel (#32) to the base panel (#33) at right angle and fix it by two screws.

Then, insert the end of the neck connector (#34) in the slit in the panel and fix it with the fixture .



3. The phantom is ready.

Adjust the height of the neck as needed, by loosen the fixture and slide it through the slit. Tighten the fixture again at the designated height.



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