



**TRUE PHANTOM**  
**SOLUTIONS**

**ADULT FULL BODY PHANTOM  
FOR X-RAY POSITIONING,  
CT AND MR IMAGING & TRAINING**



[www.truephantom.com](http://www.truephantom.com)



# User Manual

## Adult Full Body for X-Ray CT, US

**[FB-A03]**

**VERSION 2.4 ■ 06 Mar 2024**

**[info@truephantom.com](mailto:info@truephantom.com) ■ [www.truephantom.com](http://www.truephantom.com)**

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# Description

This Adult Full Body Phantom is an X-Ray/CT and US-compatible training product. The primary application of this phantom is to train and demonstrate various patient positioning techniques in radiology. Other uses include hands-on experience with diagnostic imaging techniques and visual evaluation to find optimal scanning conditions.

The model of this phantom is based on an adult male body that weighs about 70 kg (154 lb) and measures 175 cm (69 in) in height.

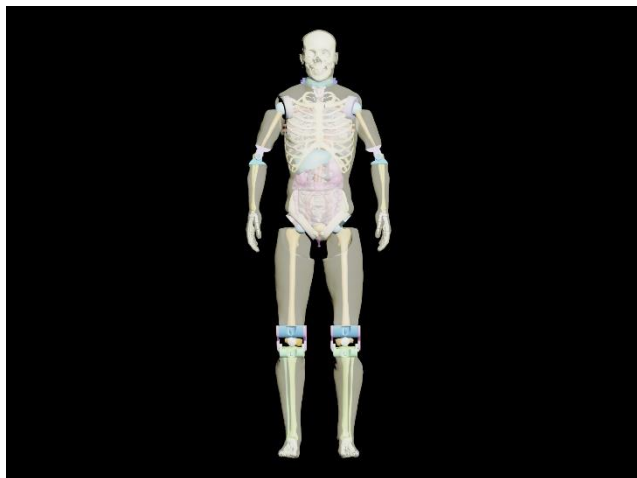
The bones have a realistic three-layered structure with inner porosity, which can be adjusted according to the requirement of the particular project. Customizable with different pathologies (lesion, tumor, infection, abnormality) upon request. This positioning phantom can be ordered in a translucent or skin-colored version.



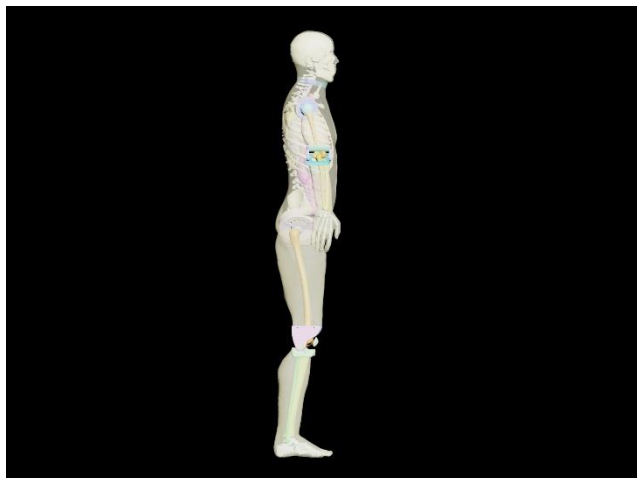
# Anatomy

- ✓ Full Human Body (10 Parts)
- ✓ Realistic Body Tissue-Mimicking Material
- ✓ Rotatable Shoulders (360° Around and 180° Sideways)
- ✓ Movable Hip, Knee, and Elbow Joints
- ✓ Detachable Head, Torso, and Limbs
- ✓ Adult Head
  - Skull
  - Brain
  - Brain Tissue
  - Grey and White Matter
  - Air Cavities
  - Frontal Sinus with Air Gaps
  - Alignment Markings
- ✓ Adult Torso
  - Spine
  - Ribcage
  - Shoulders
  - Clavicles
  - Pelvis
- ✓ Torso Organs
  - Trachea
  - Heart
  - Lungs
  - Diaphragm
  - Liver
  - Gallbladder
  - Stomach
  - Kidneys
  - Spleen
  - Pancreas
  - Large and Small Intestines
  - Bladder
  - Prostate
- ✓ Adult Arms
  - Humerus
  - Elbow Joints
  - Radius
  - Ulna
  - Wrist
  - Fingers
- ✓ Adult Legs
  - Femur
  - Knee Joints
  - Tibia
  - Fibula
  - Foot
  - Toes
- ✓ Transparent or Skin-Mimicking Appearance

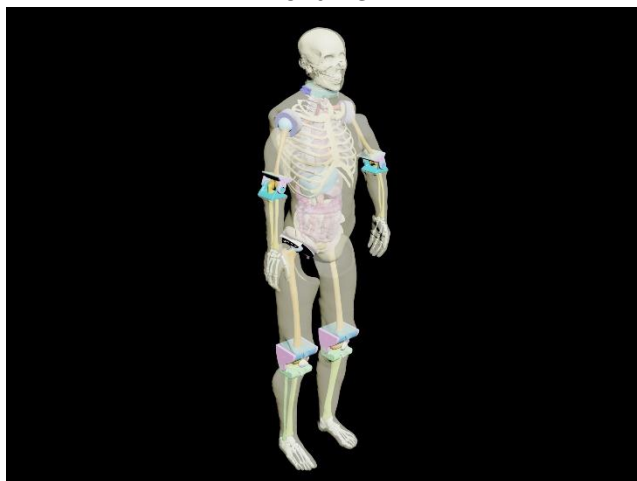
# Design



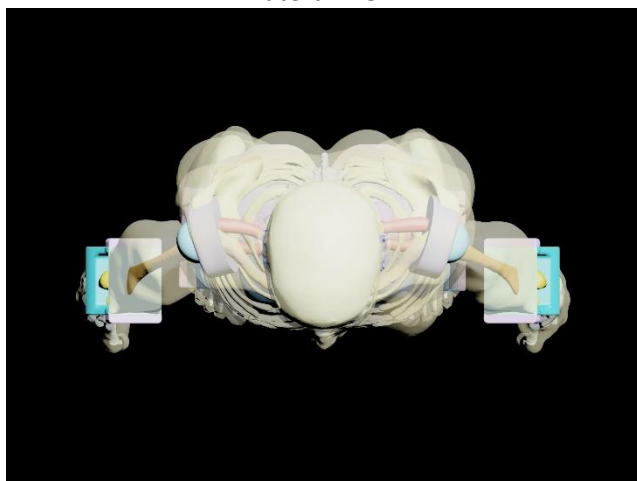
Front View



Lateral View



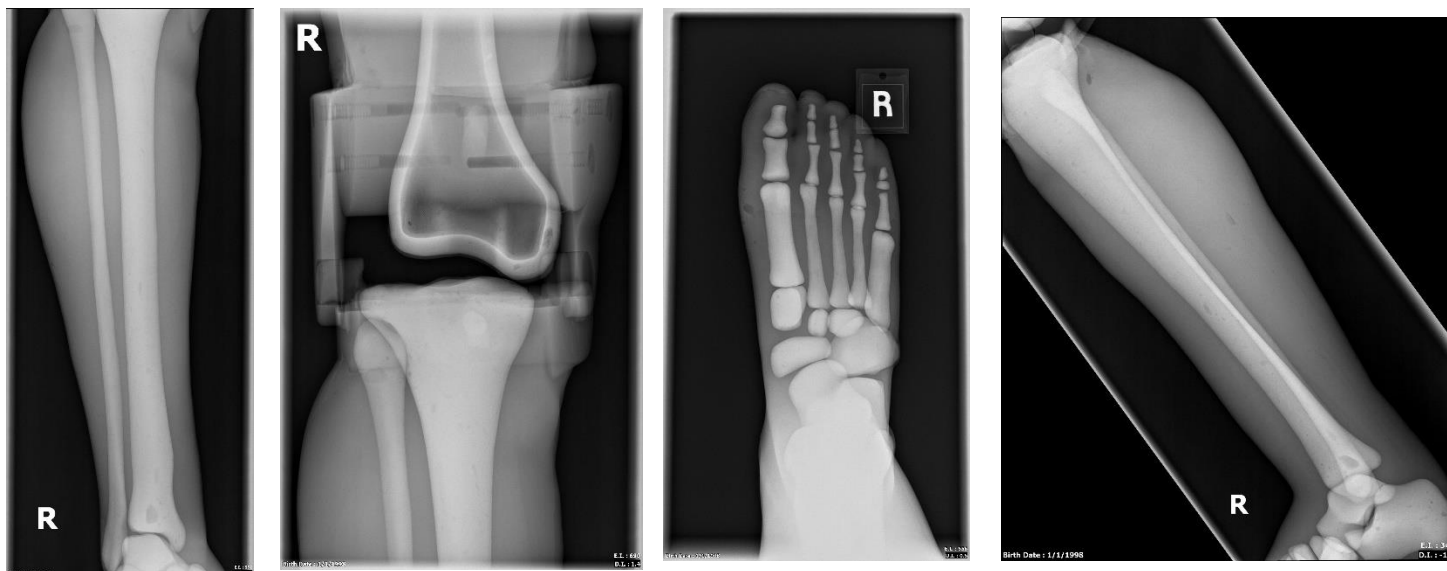
Perspective View



Top View

# X-Ray Scans

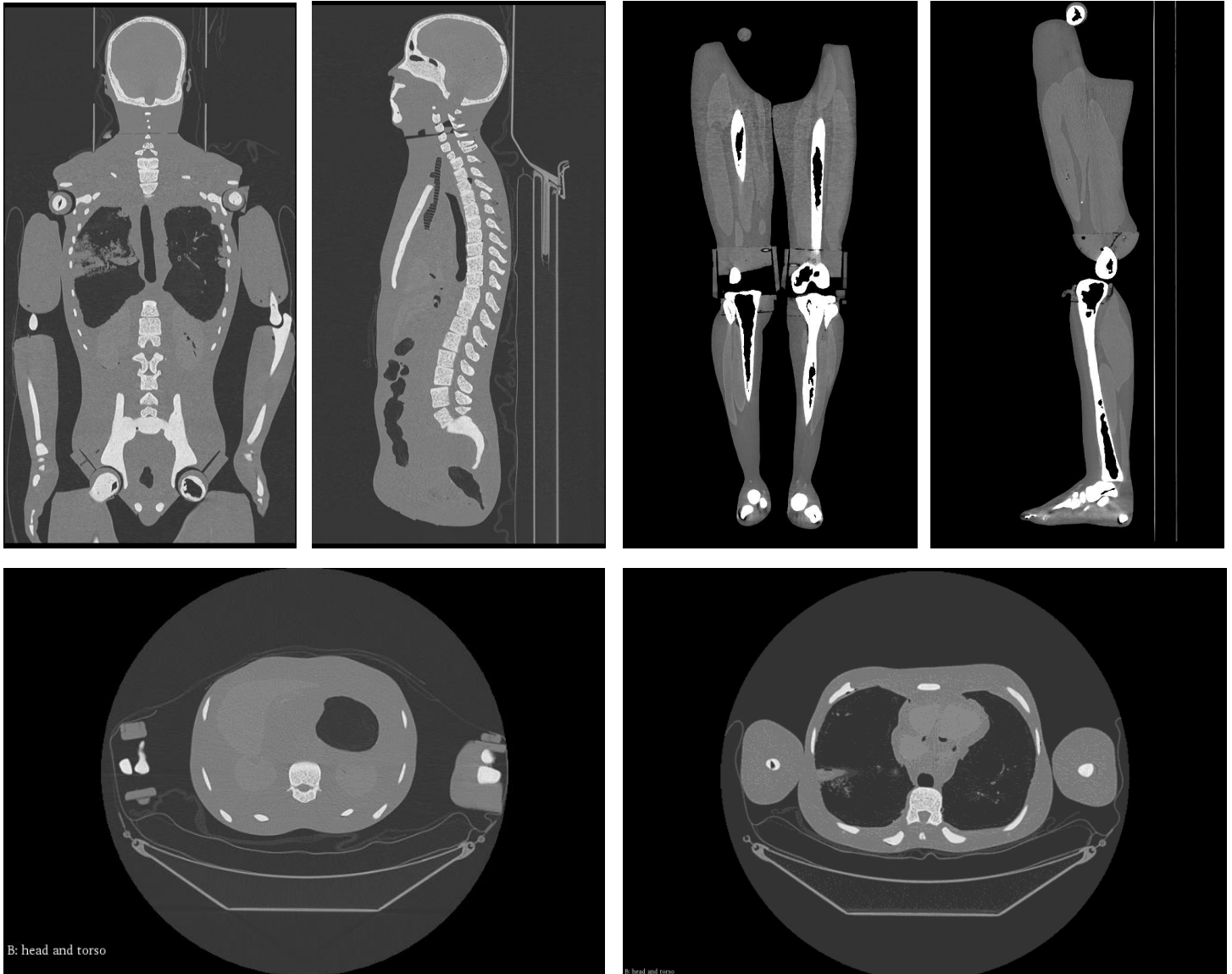




\*/ These X-Ray scans were obtained from our product, [Adult Full Body \(with Muscles\) for X-Ray CT, MRI](#) SKU: FB-A02. These serve as an example to refer to the imaging quality of this phantom; the standard Full body phantom (FB-A01) will not have muscles in the arms and legs. If you have any questions related to these, please write us at [info@truephantom.com](mailto:info@truephantom.com)/\*



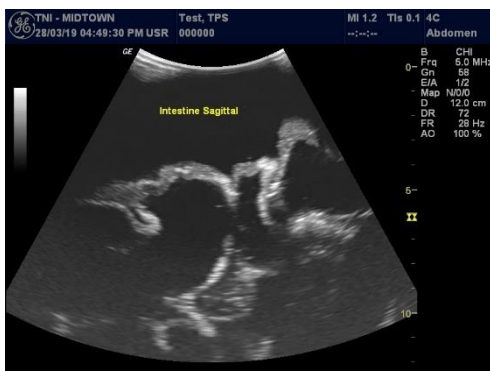
## CT Scans

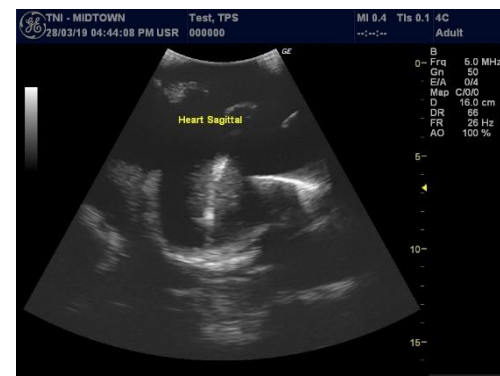
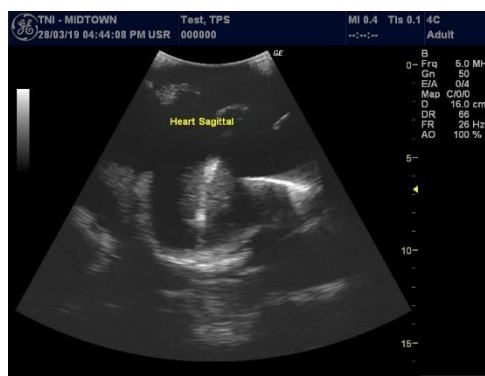
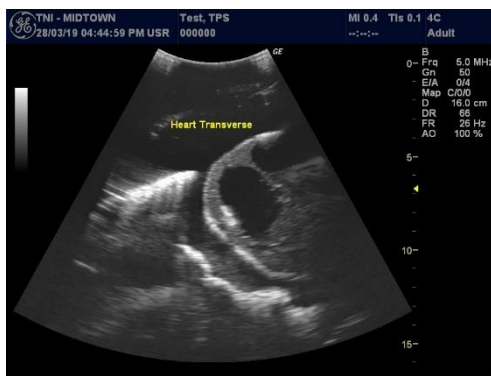


\*/ These CT scans were obtained from our product, [Adult Full Body \(with Muscles\) for X-Ray CT, MRI](#) SKU: FB-A02. These serve as an example to refer to the imaging quality of this phantom; the standard full body phantom (FB-A01) will not have muscles in the arms and legs. If you have any questions related to these, please write us at [info@truephantom.com](mailto:info@truephantom.com)/\*



# US Scans





\*/ These scans were obtained from the [Adult Torso for X-Ray CT, US](#) SKU: US-A02 and were taken using a GE device. These images are used only for reference. The abdominal probe of 3.0 MHz -5.0 MHz. If you have any questions related to these, please write us at [info@truephantom.com](mailto:info@truephantom.com) /\*

# Technical Properties

Type of Tissue	Sound Velocity[m/s]	Density [g/cm <sup>3</sup> ]	Attenuation Measured at 2.25 MHz [dB/cm]	Hardness [Shore OO]	T2 [ms]	Speckles
Organs with Speckles (liver, kidneys, etc.)	1400 ± 10	0.99	1.0 ± 0.2	20	70	VARIABLE
Organs without Speckles (stomach, intestines, etc.)	1400 ± 10	0.99	1.0 ± 0.2	20	70	NO
Body Tissue	1400 ± 10	1.00	1.2 ± 0.2	30	65	NO/LOW
Tumor Feature (Optional)	1400 ± 10	1.01	1.2 ± 0.2	30	65	YES
Cortical Bone	3000 ± 30	2.31	6.4 ± 0.3	N/A	N/A	N/A
Trabecular Bone	2800 ± 50	2.03	21 ± 2	N/A	N/A	N/A
Brain Matter	1400 ± 10	0.99	1.0 ± 0.2	20	70	YES
Brain White Matter	1400 ± 10	1.01	1.3 ± 0.2	35	60	YES

**Thermal Properties of Bone-Mimicking Tissue**

Thermal Conductivity	Volumetric Specific Heat Capacity	Thermal Diffusivity	Thermal Resistivity	Specific Heat	Speed of Sound
0.776 W/ m K	1.040 MJ/ m <sup>3</sup> K	0.746 mm <sup>2</sup> / s	1.289 m K/ W	0.978 J/ g Deg Celsius	3070 m/s

**HU Values of the Tissue Mimicking Materials**

S.No.	Tissue Type	HU Value (average)
1	Body Tissue	-25
2	Brain Tissue	-25
3	Trabecular Bone	800
4	Cortical Bone	1300
5	Aorta	40
6	Vena Cava	40
7	Trachea	80 (Tissue Part), -1000 (Air Filled Part)
8	Pancreas	110

9	Spleen	110
10	Kidneys	110
11	Bladder	35
12	Rectum Wall	100
13	Sigmoid Colon Wall	100
14	Heart	40
15	Liver	110
16	Gallbladder	35

## Materials Used

- ✓ Soft tissue and organs: Composition of urethane-based soft resin
- ✓ Synthetic bones: Patented ceramic-reinforced epoxy-based composite material

## Size and Weight of the Phantom

- ✓ Phantom Size: 69 Inches, Weight: 154.4 Lbs (approx.).
- ✓ Shipment Size: 47 x 26 x 18 Inches, Weight: 198.5 Lbs (approx.)

## Included In Order

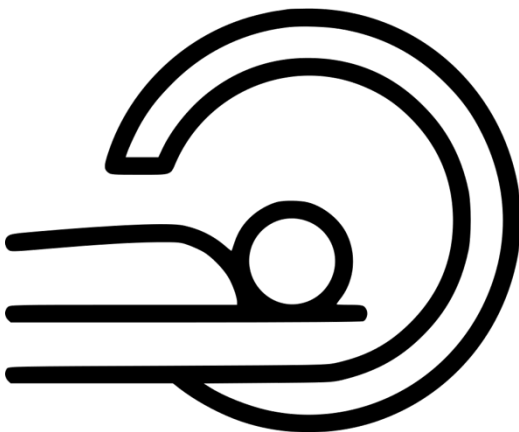
- ✓ Adult Full Body Phantom
- ✓ User Manual/Assembly Instructions
- ✓ 2-Year Warranty & Unlimited Customer Service
- ✓ Hard Carry Case

## Handling the Phantom



- **Handle with Care:** When lifting, carrying, or moving the phantom, use caution to avoid damage.
- **Two-Person Handling:** We recommended that two individuals handle the phantom together, ensuring secure and controlled movement.
- **Positioning the Phantom:** While moving the limbs of the phantom be cautious to avoid any damage to joints/connectors.
- **Proper Gripping Technique:** Hold the phantom firmly by its torso to maintain stability. Avoid any pulling or gripping of the arms, legs, or head.
- **Moving the phantom:** We suggest the use of a stretcher for carrying the phantom within the premises.

## Scanning Instructions



- The phantom is fabricated based on the anatomy of the real human body. It can be scanned per the standard protocols used while positioning a real person.
- The phantom can be put on horizontal and vertical positions for scanning purposes.
- Anterior, Lateral, and Posterior techniques can also be performed.

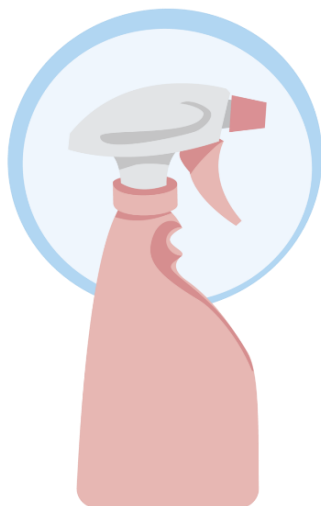


## Storage and Handling



- The phantom is made of urethane-based material and should be protected from direct exposure to any intense UV light.
- The experiments conducted on the phantom can be performed in a sunny lab, but leaving the phantom under direct sunlight for weeks or months is not recommended. If the phantom is not in use, we strongly recommend storing it in a dry and dark place or covering it with a plastic sheet/foil.

## Cleaning



- The phantom is water-resistant and can be cleaned after use. It is ideal for cleaning it either with water or with soapy water.
- It is also quite resistant to chemicals, but if stronger solvents are meant to be used with the phantom, we recommend doing a small test on the bottom part of the neck or legs. The phantom should be placed on its belly, and the chosen solvent can be applied on a small, selected surface of the phantom for a few hours. If there is no visible effect on the phantom's surface, it is safe to assume that the phantom is resistant to the tested chemical, and it is safe to use it for the rest of the phantom. In other cases, avoid the solvent or contact us for alternatives.