Healthcare

CAE Blue Phantom
User Guide

BPAAA1500 Abdominal Aortic Aneurysm Ultrasound Training Model

CAE

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Cautions and Warnings

Read this user guide, including all cautions and warnings, before you use your CAE Blue Phantom™ ultrasound training model. Use this product only as described in this guide. If you use the product incorrectly, it may be unsafe and will void your warranty. Keep this information for future reference.

General Precautions

- Make sure the training model is set up on a stable, sturdy work surface such as a bed, stretcher, or table that will not collapse and cause injury to users.

- Place heavier training models on a patient bed or stretcher rated to support the weight.

- Place the model on smooth surfaces only. Rough or uneven surfaces can leave impressions on the skin and damage the model.

- Do only the procedures supported by each product as described in this guide.

- Do not use needles. This model is not designed for punctures or other needle access. Using needles can cause injury and will void the warranty.

- Do not use or store other sharp objects such as scissors, scalpels, or box-cutters with the training model.

- Do not pull on the training model skin. This can cause the skin to tear.

- Do not mark directly on the training model as this will permanently damage it.

- Do not insert any objects or tools into the model except for the equipment, accessories, or medical supplies intended for use with this model.

- Do not use chemical solvents on the models.

- Clean the training model with water and a light soap solution only. Do not immerse the model or use large amounts of liquid to wash it.

Latex-Free

- All CAE Blue Phantom training models, products, and accessories are manufactured only of materials that do not contain latex.

Fluids System

- Use only CAE Blue Phantom fluids. Do not substitute another fluid unless directed in this guide. Other fluids can affect the imaging quality and promote fungal or bacterial growth, and may void your warranty. Use fluids only as directed.

- Do not modify the fluid reservoirs or any assembly components.

- Protect your eyes, skin, and clothing against accidental fluid exposure. Refer to the Material Safety Data Sheet (MSDS) for guidance.
    - May irritate eyes or skin; flush well with water.
    - May contain pigments that stain clothing; wash immediately with cold soapy water.

- Fluid is not intended for human consumption. If accidental ingestion occurs, drink a glass of water and consult a physician.

Service and Repair

- The CAE Blue Phantom training models are not user-serviceable. Only a trained technician may open or disassemble the product.

- Unauthorized use or handling of the model may void the warranty.

- If you have a problem with your product, contact CAE Customer Support.

Introduction

This user guide describes the features, use, and care of the following training model:

- CAE Blue Phantom Abdominal Aortic Aneurysm Ultrasound Training Model (BPAAA1500)

This model is intended as a platform for the practice of ultrasound examination of an abdominal aortic aneurysm.
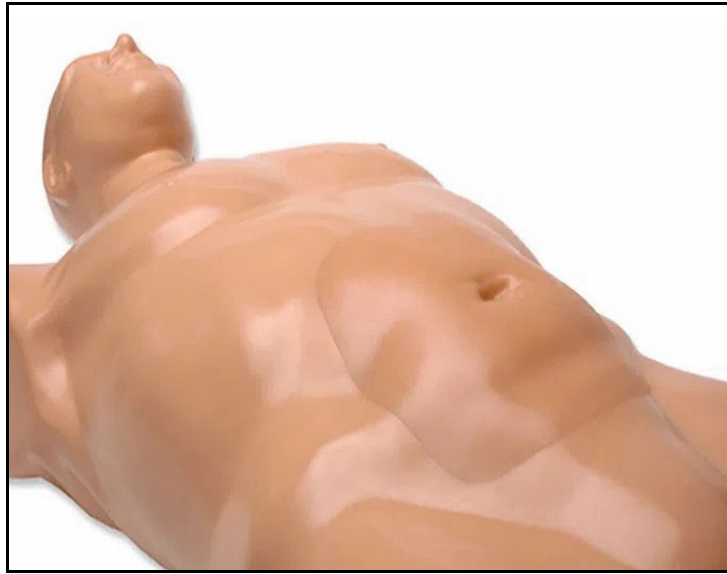
Ultrasound Training Model

Anatomy

CAE Blue Phantom training models are constructed using our patented Simulex™ ultrasound tissue which has imaging characteristics that mimic human tissue. The models contain skeletal components so the user will encounter the same imaging landmarks as in a human patient.

This training model has one tube that is used to fill the internal vasculature. The tube has a female Luer lock connector that is designed to work with syringes that have a male Luer lock connector.

Models are delivered with minimal fluid. Users must infuse additional fluid to prepare the model for use. More information can be found in the *Using the Training Model* section of this guide.

The model has the following internal anatomy:

- Abdominal aortic aneurysm with thrombus
- Inferior vena cava
- Hemoperitoneum
- Renal vessels
- Bowel
- Spine
- Accessory structures

The model has a hand bulb to manually simulate arterial pulsation. The pulsation is not palpable and is only visible on ultrasound to distinguish between artery and vein. For more information, see the *Using the Training Model* section of this guide.

Equipment Overview

The following items are included with your shipment:

- Ultrasound training model
- Red ultrasound refill fluid

The following additional items are required for training but not included in your purchase:

- Ultrasound system with with abdominal transducer
- Ultrasound gel

CAE Blue Phantom training models are compatible with any diagnostic ultrasound system. General frequency ranges for diagnostic ultrasound imaging are 2–20MHz.

Optional accessories and consumables for your model are available on the CAE website for purchase:

- BPPARA1304 Soft storage case
- BRS180-RED Red ultrasound refill fluid

Using the Training Model

This section has information and instructions about the setup and use of the training model and any specific training procedures.

Setup

Follow the guidelines below to unpack and set up your CAE Blue Phantom training model.

1. Open the shipping carton:

    º Use extreme caution with sharp tools, such as a box cutter, to avoid damage to the training model.

2. Unpack the equipment:

    º Remove the training model from its shipping container. For heavier models, use proper lifting techniques to prevent bodily injury.

    º Review the equipment, accessories, and supplies to make sure all necessary pieces are present. See the *Equipment Overview* section of this guide for a list of items included with this model.

3. Set up for training:

    º Put the model on a stable patient bed, stretcher, or table.

    º Prepare your ultrasound system and equipment.

    º Gather any procedural equipment and supplies.

Fluid Setup

The training model is shipped with minimal fluid in any vessels or fluid spaces. During periods of non-use, fluid may also evaporate from inside the model.

To prepare the insert for training, fill using this method:

Syringe Fill (also to remove air)

1. Remove the cap of the fill tube.

2. Fill a syringe half-full and connect it to the tube.

3. Hold the tube up and tap it to move any air bubbles upwards.

4. Aspirate the air before before filling for optimal imaging.

5. Inject 10 ml of fluid.

6. Remove 5 ml of fluid along with any air.

7. Repeat steps 3 through 6 until all the air is removed and the vessels are filled.

8. Replace the cap.

An optimally-filled vessel can be identified using ultrasound by the presence of a black echo-free lumen.
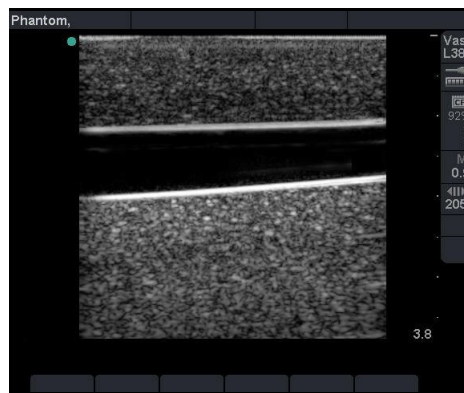
Normal Fluid Level - Good Imaging

A low fluid environment is identified by the inability to see the vessel during normal ultrasound imaging. This is due to the presence of air, which reflects all sound energy.

Low Fluid Level - Poor Imaging

Training

This section provides information about using your model for training and practice.

Ultrasound Scanning

Note: CAE Blue Phantom products do not teach ultrasound procedures or techniques. Refer to your institution or training program for more information.

To scan with your training model and conduct a simulated ultrasound-guided procedure:

1. Place the model in the appropriate position for scanning.

2. Place ultrasound gel on the transducer or on the training model in an adequate quantity so that the transducer slides effortlessly on the model. Add more gel as needed.

3. Adjust the ultrasound system controls per your training protocol and the manufacturer's instructions. Optimize the image with the ultrasound controls as needed.

Using the Hand Bulb

This model is equipped with a hand bulb. You can create a pulse in the arteries by lightly squeezing the hand bulb. The pulse is not physically palpable, but is visible via ultrasound.

The veins do not pulsate, and are collapsible with light pressure from the transducer.

⚠ **CAUTION**

Excess pressure on the hand bulb may cause a fistula between arteries and veins.

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Care and Maintenance

With proper care, your training model will remain in optimal condition and ready for use.

Storage and Transport

Follow these guidelines to properly store or transport your model:

- Storage temperature degree range: 45 to 85 °F (7 to 29 °C)
- Store the model as is, or in a CAE Blue Phantom storage case (if available for your model).
- Do not store in contact with other models or hard objects as the pressure can damage the Simulex tissue. Do not stack multiple training models on top of each other.
- Ensure any tubes are not pinched or compressed under the model. This will damage the tubes and void the warranty.
- When models with inserts are stored standing up for long periods of time, gravity may cause the insert to deform slightly. Remove the insert and let it sit for a few days to regain its shape.
- Store the model with some fluid in any vessels and fluid spaces. If these become dry, it will damage the model and and cause poor ultrasound imaging.
- If fluid was infused into the model during training, remove excess fluid after each training session. If you store the model with too much fluid inside, it can cause damage.
- Transport the model securely so it does not fall.
- Do not carry by the tubes or use them as handles as this will damage the model.

Cleaning

To maintain the product skin for the lifespan of the product, clean the exterior of the model after each use. Follow these steps:

1. Mix one cup of tap water with ¼ teaspoon of mild liquid soap (such as dish soap).
2. Gently clean the model's exterior with the soap mixture and a soft, non-abrasive sponge or cloth.
3. Rinse lightly with clean water.
4. Dab or pat with a clean, soft, lint-free cloth to dry the product after cleaning. Do not wipe or rub the skin, which can damage it.
5. After the model has dried completely, lightly coat the external surface of the model with baby powder and dust off any excess.

Troubleshooting

This section provides information to identify and fix problems that may occur with the product.

Removing Air

Fluid can evaporate from the model during shipment or during extended periods of non-use. Air may also enter through accidental injection during fluid filling or training use. This may cause the Simulex tissue to stick together in some areas, preventing fluid from circulating. Remove any air from the model for optimal performance.

To remove air:

1. Fill a syringe with fluid and connect it to the tube.

2. Infuse fluid, and tilt the model up at least 6-10" so any air rises to the top.

3. Let the model sit for at least one hour to allow any air to rise.

4. Use the syringe to slowly pull the fluid out of the model.

5. Watch for air bubbles and let them rise to the top (back) of the syringe.

6. Slowly push fluid back in without pushing the air in.

7. Repeat steps 4-6 three to four times.

8. Empty the syringe into a container and use it to remove any additional fluid, then disconnect it.

   Note: When all the fluid is removed, the syringe will be under vacuum. Do not put excessive force on the syringe or the tissue may rupture.

9. If there is still air, fill any fluid spaces or vessels with fluid and let the model sit overnight, then repeat the procedure.

Help and Technical Assistance

For assistance, contact CAE Customer Support. Contact information for all regions is available on the back cover of this guide and on the CAE Healthcare website.

For more information about CAE products, contact your regional sales manager or the CAE distributor in your country, or visit caehealthcare.com.

Tel +1 941-377-5562 or 866-233-6384

For customer support, please contact CAE.

Customer Support Headquarters – United States
Monday – Friday from 7:00 a.m. to 6:00 p.m. ET
Phone 1-866-462-7920
Email: srqcustomerservice@cae.com

Customer Support – Canada
Monday – Friday from 8:00 a.m. to 5:00 p.m. ET
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Email: can.service@cae.com

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