

Healthcare

CAE Blue Phantom User Guide

BPTT1000-1 Thoracentesis and Thoracostomy Ultrasound Training Model



CAE

Disclaimer

This product is a simulation device designed for training and demonstration purposes only.

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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.
- Heavier training models should be placed on a patient bed or stretcher rated to support such 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.
- Use only needles to access fluids.
- 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.

Needles and Catheters

- Use only new, sharp, unbent 18–21 gauge needles or 7F catheters. Smaller needles (higher than 22 gauge) can bend during use and damage the model.
- The self-healing feature of CAE Blue Phantom simulated tissue applies only to needle sticks from 18–21 gauge needles. Healing is not guaranteed if needles larger than 18 gauge, scalpels, or other sharp implements are used to cut into or pierce the model.
- Replace needles after ten uses. Dull needles can damage the model.
- Use extreme caution when using needles during training to avoid injury.

Fluids System

- Use only CAE Blue Phantom fluids. 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 substitute any other fluid unless indicated by this guide.
- 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 Thoracentesis and Thoracostomy Ultrasound Training Model (BPTT1000-1)

This model is intended as a platform for the practice of ultrasound-guided thoracentesis and thoracostomy procedures.



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 model is delivered prefilled with CAE Blue Phantom ultrasound fluid. More information can be found in the *Using the Training Model* section of this guide.

The internal anatomy of this model includes:

- Chest wall
- Pleural cavity
- Lung
- Atelectatic lung
- Various pleural effusion pockets
- Skin layers
- Fat layer
- Pleural lining

Equipment Overview

The following items are included with your shipment:

- Ultrasound training model
- Yellow ultrasound refill fluid

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

- Ultrasound system with appropriate transducer
- Ultrasound gel
- Thoracentesis and thoracostomy equipment per local protocol

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

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

- BPTT1002 Thoracentesis replacement insert
- BPTT1003 Thoracentesis anterior portal replacement insert
- BPTT1004 Thoracentesis lateral portal replacement insert
- BRS183-YELLOW Yellow ultrasound refill fluid
- BPLP2105 Soft storage case

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:
 - Use extreme caution with sharp tools, such as a box cutter, to avoid damage to the training model.
2. Unpack the equipment:
 - Remove the training model from its shipping container. For heavier models, use proper lifting techniques to prevent bodily injury.
 - 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:
 - Put the model on a stable patient bed, stretcher, or table.
 - Prepare your ultrasound system and equipment.
 - Gather any procedural equipment and supplies.

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.

Ultrasound-guided Procedures

Your CAE Blue Phantom training model is a realistic platform for complete thoracentesis and thoracostomy procedural training. Use your normal protocol and equipment, and follow your institution's policies and guidelines.

NOTE: The anterior and lateral thoracostomy inserts are cannot be scanned with ultrasound. They are for the practice of chest tube placement only.

▲ CAUTION

Do not use antiseptics, such as iodine, on your training model. This can cause permanent damage to the model.

During thoracentesis training, users may withdraw fluid from the model. To maintain the fluid level, any fluid that is withdrawn must be refilled.

Refill the fluid using one of the these methods

Method A: Syringe Fill (also to remove air)

1. Fill a syringe half-full.
2. Identify the inferior lung location to inject fluid.
3. Inject 10 ml of fluid.
4. Remove 5 ml of fluid along with any air.
5. Repeat steps 4 and 5 until any air is removed and the vessels are filled.

Method B: Re-injection

- During use, the user immediately injects any withdrawn fluid back into the model at the access site.
- Take care not to inject any air into the model when using this method.

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)
- 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 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, use the syringe fill steps found in the *Using the Training Model* section of this guide.



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

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