

## Instructions and User Guide

### Ultrasound Central Line Training Models

BPH660 Series, BPHNB670 Series, BPH680-Clear Series



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# Overview

# 1

## Giving you the confidence only experience can offer™

Congratulations on the purchase of your Blue Phantom™ ultrasound model(s) for hands-on training. Every product we manufacture at Blue Phantom™ is specifically designed to be the most realistic and ultra-durable ultrasound simulation phantoms available anywhere. Our high standards for quality manufacturing and design guarantee that you receive only the absolute best.

## About Blue Phantom™

Blue Phantom™ brings you the most realistic and durable hands-on ultrasound training models available anywhere. At Blue Phantom™ we know that learning to use ultrasound requires practice. You gain confidence and skill through experience. That is why we offer you the best ultrasound simulation training available.

## Blue Phantom™ Warranty

Blue Phantom™ takes pride in its quality design and manufacturing standards. Our products are warranted to you by Blue Phantom™ for one year from the date of purchase against defects in workmanship and materials. During the warranty period, a defective part or product will be replaced either with a new or reconditioned part or product, depending on the availability at the time.

This warranty covers normal consumer usage and does not cover damage incurred through use not consistent with the product design. Failure that results from alteration, accident, misuse, vandalism, or neglect is not covered under this warranty. This warranty does not extend to any products that have been used in violation of written instructions.

## Product Cautions

# 2

Please read this instruction guide carefully. Do not begin using this model until you fully understand these safeguards and have read the user guide in its entirety.

### Important Safeguards



1. Read Instructions – All safety and operating instructions should be read before the unit is operated.
2. While all parts of this user guide are important, the red flag that you see to the left denotes especially important content. Please familiarize yourself with all of the content prior to using your training model or damage to the model can occur.
3. This user guide includes instructions applicable to a variety of model configurations. Not all models contain electrical components. If your model does not contain electrical components (Hand Pump configurations), please disregard the *Chapter 2: Product Cautions—Risk of Electrical Shock* section on page 5 of this user guide.
4. Retain Instructions – The safety and operating instructions should be retained for future reference.
5. Heed Warnings – All warnings in the operating instructions should be adhered to.
6. Follow Instructions – All operating and maintenance instructions should be followed.
7. Weight Warning—Use caution as this model is heavy. Use proper lifting techniques to prevent bodily injury. Notify others of the heavy weight warning to prevent others from being injured while operating or moving the model. Product weight is approximately 28lbs (13kg).
8. Care must be taken to place the model in a position in which it will not fall off of the bed or surface, as this may cause injury.
9. Accessories – Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall causing serious injury to a child or adult, and serious injury to the unit.
10. **CAUTION:** Please use extreme care when using needles and sharp objects as to not accidentally injure yourself during training.



## Risk of Electrical Shock



**WARNING:** To reduce the risk of electric shock, do not adjust or alter electronic pumping components of models containing automated pumping systems. Refer servicing to Blue Phantom™ personnel or a Blue Phantom™ trained technician. Do not expose any electronic components to rain or moisture. Do not submerge to clean. Unplug unit from power source before cleaning.

1. Upon receiving the unit, please read this user guide in its entirety. If you have any questions regarding proper use and care, please contact Blue Phantom™ immediately.  
Telephone: (425)881-8830  
Email: [customersupport@bluephantom.com](mailto:customersupport@bluephantom.com)  
Web: [www.bluephantom.com](http://www.bluephantom.com)
2. Do not open the back panel of the model unless necessary to refill the model, swap tissue inserts, or access QuickFill™ tubes. Prior to opening the back panel, please familiarize yourself with all instructions provided in the User Guide. Failure to adhere to all recommendations of this User Guide will void your warranty.
3. Unplug the unit when not in use.
4. Do not adjust or alter the electronic pumping components located in the back panel of the training model. Altering or adjusting the electronic pumping system by anyone other than Blue Phantom™ personnel or a Blue Phantom™ trained technician, will void your warranty.
5. Never push objects of any kind into the unit as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill liquid into the unit.
6. Cleaning – Unplug unit from the power source before cleaning.
7. Water and Moisture – Do not use this unit near water – for example near a bathtub, wash bowl, sink, in a wet environment, or the like.
8. Servicing - Do not attempt to service electronic pumping components of this unit yourself as altering or adjusting the electronic pumping components may expose you to dangerous voltage or other hazards. Refer all servicing of electronic pumping components to Blue Phantom™ personnel or a Blue Phantom™ trained technician.
9. Power Sources – Units with electronic components should only be operated from the type of product source indicated on the marking label. If you are not sure of the type of power supply you are using, consult your local power company.
10. Grounding or Polarization – This unit may be equipped with either a polarized 2 wire AC (Alternating Current) line plug (a plug having one blade wider than the other) or 3-wire grounding type plug, a plug having a third (grounding) pin.
11. The 3-wire grounding type plug will fit into a grounding type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety features of the polarized plug.

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## Risk of Electrical Shock (*continued*)

12. Power cord protection – Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon them or against them, paying particular attention to cords of plugs, convenience receptacles, and the point where they exit from the unit.
13. To reduce the risk of burns, fire, electric shock, or injury to persons, the electronic controller (Automated Pump configurations) should never be left unattended when plugged in.
14. The Automated Pump system contains sensitive components. Do not drop, disassemble, open, crush, bend, deform, puncture, shred, microwave, incinerate, paint, or insert foreign objects into housings.
15. Do not use Automated Pump configurations in rain, or near washbasins or other wet locations. Take care not to spill any food or liquid on the model or associated electrical components. In case electronic components get wet, unplug all cables and allow it to dry thoroughly before turning it on again. Do not attempt to dry electronic components with an external heat source, such as a microwave oven or hair dryer. An electronic pumping system that has been damaged as a result of exposure to liquids is not serviceable.
16. Potentially Explosive Atmospheres—Unplug electronic pumping system when in any area with a potentially explosive atmosphere. Sparks in such areas could cause an explosion or fire, resulting in serious injury or even death.
17. It is important to keep model and corresponding electronic pumping system within acceptable temperatures. Operate all components where the temperature is between 0° and 35° C (32° to 95° F). Avoid dramatic changes in temperature or humidity as condensation may form on or in the electronic pumping system.

## Product Information

# 3

### Blue Phantom™ Central Line Series

- [BPH660 Series](#)—Vascular Access with Flesh Tone Tissue Insert
- BPHNB670 Series—Regional Anesthesia and Vascular Access with Flesh Tone Tissue Insert
- BPH680-Clear Series—Vascular Access with Transparent Tissue Insert

### Included in this Package

- Blue Phantom™ Central Line Ultrasound Training Model
- Blue Phantom™ Red Ultrasound Refill Solution ([BRS180-Red](#))
- Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#))
- Low voltage transformer (Automated Pump configurations only)
- User Guide and Utilities CD

### Additional Items Required for Training

- For optimal performance, please use 18-21 gauge sharp and unbent needles and associated catheter kits (please see *Chapter 4: Utilizing Your Training Model—Using Needles and Catheters* section on page 11 of this user guide)
- Ultrasound system with a high frequency linear array transducer
- Ultrasound gel

### Optional Accessories for Your Training Model

- Blue Phantom™ Red Ultrasound Refill Solution ([BRS180-Red](#))
- Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#))
- Blue Phantom™ Soft Storage Case ([BPH662-A](#))
- Blue Phantom™ Hard Storage Case

### Introduction to Your Training Model

This model is intended as a platform for ultrasound hands-on central venous access technique training. The model is designed to be extremely realistic and its self healing design provides you with superb durability. In order to get the most out of your training platform, it is important that you properly care for your model.

*(continued on next page)*



## Quick Facts about Your Training Model

- Images like a real patient providing a realistic training environment
- Use ultrasound guidance to cannulate and thread guidewires, dilators and catheters
- Self healing tissue withstands tremendous use, dramatically reducing necessity for replacement parts
- Arterial pulse options include: Hand Pump and Automated Pump configurations
- Available with brachial plexus option for regional anesthesia training
- Use with any ultrasound system—no computer simulation or software necessary
- Made in USA





# Utilizing Your Training Model

# 4

## Blue Phantom™ Central Line Series

[BPH660](#), BPHNB670, BPH680-Clear

### Anatomy of Your Training Model

1. Remove your training model from its shipping container and make sure that you have received all of the items listed in *Chapter 3: Product Information—Included in this Package* section on page 7 of this user guide. If you did not receive one of the listed items, or if you received the wrong items please contact Blue Phantom™ Customer Support immediately:  
Telephone: (425)881-8830  
Email: [customersupport@bluephantom.com](mailto:customersupport@bluephantom.com)  
Web: [www.bluephantom.com](http://www.bluephantom.com)
2. Familiarize yourself with the anatomy of your training model.



Blue Phantom™ ultrasound training models are constructed using our patented simulated ultrasound tissue and mimics imaging characteristics to that of human tissue. Care must be taken to not place the model on rough surfaces as the model can take on the characteristics of that surface. Do not place objects under the model as the tissue is soft and will conform to the shape of the object.



Your training model comes pre-filled with Blue Phantom™ Ultrasound Refill Solution. If you suspect that your model is low on fluid, please refer to *Chapter 4: Utilizing Your Training Model—Maintaining Optimal Fluid Levels* section on page 13 of this user guide.

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## Anatomy of Your Training Model (*continued*)

Your Blue Phantom™ Central Line training model has 2 tubes exiting from the model (refer to *Image A* below). The venous line is filled with Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#)) while the arterial line is filled with Blue Phantom™ Red Ultrasound Refill Solution ([BRS180-Red](#)).



*Image A*

## Using Your Training Model

1. Remove your Blue Phantom™ from its packaging and place on a clean, hard, flat surface. Place the model in the supine position.
2. This model was designed for ultrasound guided central line training. If you would like, the model can also be utilized for blind insertion technique training. Please see steps 3-4 on the next page if you plan to utilize ultrasound guidance.



You may mark your model with a dry erase marker at your own risk. Blue Phantom™ recommends testing the dry erase marker on the underside of the tissue insert prior to regular use. If satisfied with the test mark, you may utilize the dry erase marker during training. Immediately following use, gently remove the dry erase marker using a damp paper towel. DO NOT leave dry erase marker on your model for more than one hour or permanent damage to your model may occur.

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## Using Your Training Model (*continued*)

3. Place ultrasound gel on the model or on the ultrasound transducer in adequate quantities so that the probe slides effortlessly across the surface of the model. Add more gel as necessary.
4. Adjust the ultrasound system controls per the manufacturer's instructions, increasing and decreasing the depth and gain controls until the desired image is obtained.



If you intend on guiding sharp objects into the phantom, never place the model in a location where you might accidentally puncture yourself.

## Using Needles and Catheters



1. For best performance, we recommend that you utilize new, sharp, unbent 18-21 gauge needles and associated catheter kits when accessing the structures in the model; you may utilize up to 7 French Triple-Lumen catheters.
2. Do not use any needle larger than 18 gauge or permanent damage to your model may occur.
3. Smaller bore needles (>21 gauge) can bend during use and damage your model's simulated tissue.
4. Aggressive repositioning of needles rather than removing and repositioning can cause stubborn or permanent needle tracks due to the needle tip dragging through the simulated tissue.
5. Dull needles may also cause permanent damage to the tissue. It is important to replace needles approximately every ten cannulations.
6. If you strike bone during training, remove the needle and replace it before re-inserting. Striking bone can cause the needle to become dull.
7. Accessing arteries may result in the presence of refill solution dimples at previous cannulation sites; this does not indicate that your training model is damaged.
8. **CAUTION:** Threading catheters into the arteries of Automated Pump models may result in damage to the pumping mechanism.



## Performing Central Line and Regional Anesthesia Procedures

The Blue Phantom™ Central Line training model accommodates full central line procedural training, including:

- Create a sterile field
- Infuse local anesthetics and Blue Phantom™ Ultrasound Refill Solution (BPH670-Series Only— vascular access and regional anesthesia models)
- Cannulate vessels and thread guidewires, dilators and catheters
- Points of access include internal jugular (IJ), subclavian, infraclavicular and supraclavicular approach
- Confirm needle tip location by withdrawing fluid once the vessel is accurately accessed
- Simulate arterial pulsation manually by pumping the provided hand bulb or plugging the transformer into a power source (Automated Pump configurations only)
- Veins are compressible using mild pressure while the arteries remain uncompressed

Your Central Line training model includes vascular anatomy and anatomical landmarks of the right upper thorax and neck.

- Arterial anatomy includes: carotid artery, subclavian artery and axillary artery
- Venous anatomy includes: internal jugular vein (IJ), brachiocephalic vein, subclavian vein and axillary vein
- Anatomical landmarks include: the trachea, suprasternal notch, manubrium and clavicle
- Simulated superior vena cava (SVC), right atrium and right ventricle allow users to fully thread guidewires and catheters without resistance
- Models configured with the Regional Anesthesia option also include the brachial plexus for interscaline, infraclavicular and supraclavicular nerve block training and better accommodates the posterior interscaline approach

Please always utilize sharp and unbent 18-21 gauge needles and associated catheter kits; you may utilize up to a 7 French Triple-Lumen catheter. For more information, please refer to *Chapter 4: Utilizing Your Training Model—Using Needles and Catheters* section on page 11 of this user guide. Always heed the following warning while utilizing your training model:



1. DO NOT use antiseptics such as iodine on your training model. This may cause permanent damage to the simulated tissue.
2. It is suitable to inject/infuse local anesthetics, saline and Blue Phantom™ Ultrasound Refill Solution when performing regional anesthesia procedures. NEVER inject tap water into your training model.
3. Fluids injected around the nerves will require removal. Pull back on the plunger after injecting fluids to pull the fluid back into the syringe.
4. DO NOT perform “cut downs” or nick the simulated tissue with a scalpel (or other sharp object) when utilizing a dilator.

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## Performing Central Line and Regional Anesthesia Procedures (continued)



5. Any fluid removed from the vessels will require refilling. Lack of fluid can cause a diminished ultrasound image and resistance to threading of catheters and guidewires.
6. Through normal use, users can experience a reduction in fluid volume within the model. Please refer to *Chapter 4: Utilizing Your Training Model—Maintaining Optimal Fluid Levels* section on page 13 of this user guide for more information.

### Maintaining Optimal Fluid Levels

The Blue Phantom™ Ultrasound Refill Solution contained within the model is specially formulated to allow for optimal performance. It is important to maintain a good fluid level within your ultrasound training model. Through normal repeated use, users can experience a reduction in the amount of fluid, resulting in small amounts of air within the model. This is directly dependent upon the amount of fluid removed during simulation training.



**WARNING:** Using fluid other than that supplied by Blue Phantom™ will void your warranty. Using other fluid will cause changes in the imaging qualities of the model, reduce the ability to thread catheters, and cause fungal or bacterial growth within the model. DO NOT dilute the Ultrasound Refill Solution contained within your model.

The simplest way to maintain optimal fluid levels in the vessels is to have users inject the accessed fluid back into the model after accessing the targeted vessel. This is limited to users that are not performing the entire catheter placement procedure. Take care not to inject blue fluid (venous system) into the arterial system or red fluid (arterial system) into the venous system.



**CAUTION:** Use refill solution only as directed. Not intended for human consumption. If accidental consumption occurs, drink a glass of water and consult a physician. May irritate eyes; flush well with water. May contain pigments that can stain clothing; wash immediately with cold soapy water. Keep out of reach of children.

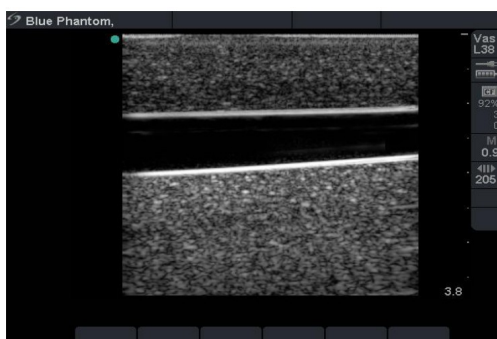
Please see below to determine if your model requires refilling and for complete refilling directions.

## How to Determine if Vessels Require Refilling

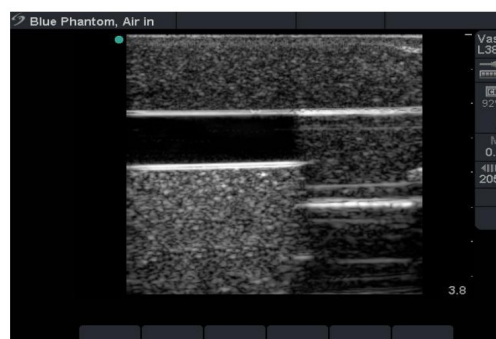
Choose one of the following methods to determine if the vessels require refilling, repeat for both arterial system and venous system:

### 1. Ultrasound Method

An optimally filled vessel will be identified by the presence of a black echo-free lumen (refer to *Image B* below). A low fluid environment is identified by the inability to visualize the vessels during normal imaging situations (refer to *Image C* below). This is due to the presence of air within the vessels, which will reflect all of the sound energy.



*Image B*



*Image C*

### 2. Non-Imaging Method

The presence of air in the QuickFill™ tubes is an indicator that your model requires refilling. Hold the QuickFill™ tube upright towards the ceiling in the fully extended position for at least 60 seconds. If an air bubble migrates to the terminal end of the tube, this indicates that the model requires refilling.

For best results, you may want to remove the tissue insert from the base platform. For instructions on removing the tissues insert, please refer to *Chapter 5: Caring for Your Training Model—Swapping Tissue Inserts* section on page 20 of this user guide.

If you have determined that your model requires refilling, please refer to *Chapter 4: Utilizing Your Training Model—Refilling Your Training Model* section on page below.

## Refilling Your Training Model

There are a number of acceptable ways to refill the simulated vessels. Choose the method that works best for your training environment. Refilling your training model is a simple process that will take approximately 10 minutes. Please follow the directions below for both Automated Pump and Hand Pump configurations.

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## Refilling Your Training Model (*continued*)



If you are uncomfortable refilling your training model for any reason, contact Blue Phantom™ and we can refill your model for a nominal fee.

Many users find it easier to refill their training model when the tissue insert has been removed from the base platform. If you would like to remove the tissue insert from the base platform of your training model prior to refilling it, please refer to *Chapter 5: Caring for Your Training Model—Swapping Tissue Inserts* section on page 20 of this user guide.

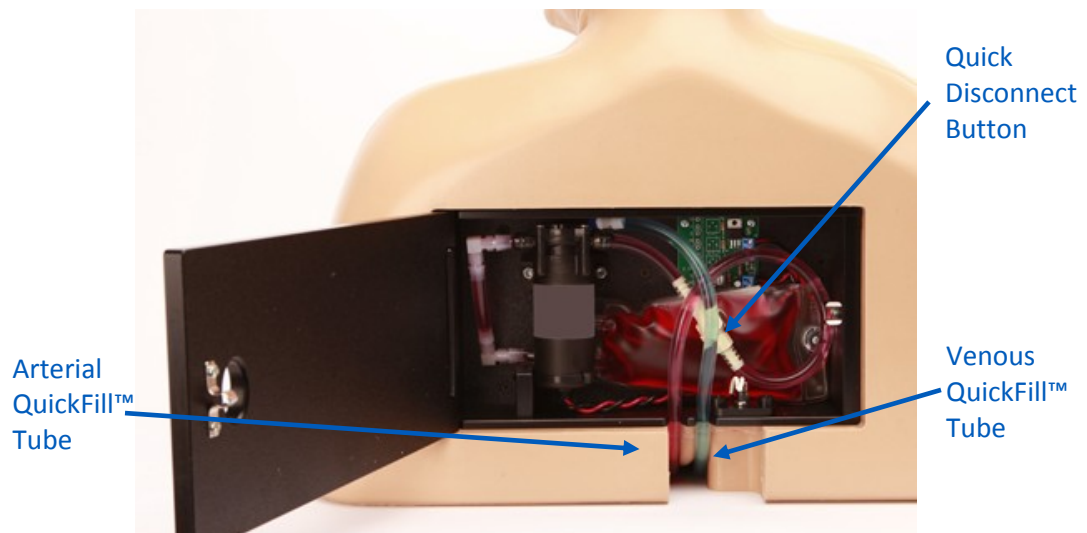
### Refilling the Arterial System (*Hand Pump and Automated Pump Configurations*)

#### Items Required

- Empty syringe
- Blue Phantom™ Red Ultrasound Refill Solution ([BRS180-Red](#)) for arterial system

#### Directions

1. Position the training model lying flat on a stable surface.
2. If you are refilling an Automated Pump model disconnect the pump from the power source and open the back panel of the model (refer to *Image D* below). If you are refilling a Hand Pump model, skip to step 4.



*Image D*

3. Once the back panel is open, locate the arterial QuickFill™ tube and press the silver quick disconnect button (refer to *Image D* above) to release the arterial QuickFill™ tube.

*(continued on next page)*



## Refilling Your Training Model (*continued*)

### Refilling the Arterial System (*continued*)

4. Fill the empty syringe with Blue Phantom™ Red Ultrasound Refill Solution ([BRS180-Red](#) ).
5. Remove the blue end cap from the y-connector on the arterial tube.
6. Hold the arterial QuickFill™ tube upright towards the ceiling in the fully extended position. Hold the tube upright for at least 60 seconds to allow any accumulated air to migrate to the terminal end of the tube.
7. Connect the filled syringe's luer lock female connector to the male connector on the arterial QuickFill™ tube.
8. SLOWLY infuse the refill solution into the arterial tube in 5ml increments until it is full. Be sure to purge air after each successive 5ml by pulling back on the plunger. Filling the venous tube SLOWLY prevents air bubbles from being introduced into the model.



When refilling the arterial QuickFill™ tube take care not to lose the blue end cap.

### Refilling the Venous System (Hand Pump and Automated Pump configurations)

#### Items Required

- Empty syringe
- Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#) ) for venous system
- IV bag (*optional*)

#### Directions

1. Position the training model lying flat on a stable surface.
2. If you are refilling an Automated Pump model disconnect the pump from the power source and open the back panel of the model (refer to *Image D* on page 15 of this user guide). If you are refilling a Hand Pump model, skip to step 4.
3. Once the back panel is open, locate the venous QuickFill™ tube. Gently release the venous QuickFill™ tube from the back panel.
4. Fill the empty syringe with Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#)).
5. Remove the blue end cap from the venous tube.
6. Hold the venous QuickFill™ tube upright towards the ceiling in the fully extended position. Hold the tube upright for at least 60 seconds to allow any accumulated air to migrate to the terminal end of the tube.
7. Connect the filled syringe's luer lock female connector to the male connector on the venous QuickFill™ tube.
8. SLOWLY infuse the refill solution into the venous tube in 5ml increments until it is full. Be sure to purge air after each successive 5ml by pulling back on the plunger. Filling the venous tube SLOWLY prevents air bubbles from being introduced into the model.

(*continued on next page*)



## Refilling Your Training Model (*continued*)

### Refilling the Venous System (*continued*)

9. High volume users will benefit from connecting either a syringe or an IV bag containing Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#)) to the venous tube. As users withdraw fluid from the model, the venous tube is automatically refilled. To do so, please follow steps 10-12 below. Otherwise, replace the blue end cap on the luer lock connector.
10. To easily maintain optimal fluid levels, fill a syringe or an empty IV bag with Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#)).
11. Connect the full syringe or IV bag to the male luer lock connector on the venous tube.
12. If utilizing an IV bag, be sure to hang the IV bag 1ft above the model. DO NOT hang the IV bag greater than 1ft above the model. This will cause the venous system to become over pressurized, which may cause fluid to seep out through previous cannulation sites.



When refilling the venous QuickFill™ tube or utilizing a full syringe or IV bag, take care not to lose the blue end cap.

### Refilling Your Training Model Using Vessel Index Markers (*Hand Pump and Automated Pump Configurations*)

If you prefer, you may also refill your training model using the vessel index markers. In order to do so, please follow the instructions provided below.

#### Items Required

- Empty syringe with sharp and unbent 18-21 gauge needle
- Blue Phantom™ Red Ultrasound Refill Solution ([BRS180-Red](#)) for arterial system
- Blue Phantom™ Blue Ultrasound Refill Solution ([BRS181-Blue](#)) for venous system

#### Directions

1. Position the training model in the upright position on a flat surface.
2. Tilt the head of the model backward slightly to expose the superior portion of the tissue insert. Carefully expose the top few inches of the tissue so that you can locate the vessel index markers. Please see *Image E* on page 18 of this user guide. The pen is pointing to the arterial line.

*(continued on next page)*

## Refilling Your Training Model (*continued*)

### Refilling Your Training Model Using Vessel Index Markers (*continued*)



*Image E*

3. Before filling your training model, it is important to be sure that you are comfortable accessing the correct vessel. If you are comfortable with filling the model via vessel index markers, skip to step 6.
4. Each vessel terminates approximately 1/2" from the surface of the tissue insert where the vessel index markers are located. Carefully attach a sharp and unbent 18-21 gauge needle to an empty syringe.
5. Insert the needle into the corresponding vessel index marker; you should feel a loss of resistance when you enter the vessel. Repeat steps 4-5 until you feel confident and proceed to step 6 once you are ready to begin.
6. Fill an empty syringe with Blue Phantom™ Ultrasound Refill Solution; be sure to use Red Ultrasound Refill Solution ([BRS180-Red](#)) for the arterial system and Blue Ultrasound Refill Solution ([BRS181-Blue](#)) for the venous system. Carefully attach a sharp and unbent 18-21 gauge needle.
7. Insert the needle into the corresponding vessel index marker; you should feel a loss of resistance when you enter the vessel.
8. SLOWLY inject the refill solution into the appropriate vessel index marker in 5ml increments. Be sure to purge air after each successive 5ml by pulling back on the plunger. Filling the system SLOWLY prevents air bubbles from being introduced into the model.
9. Repeat this process until the targeted system is full and all of the air has been purged from the system.

## Overfilling the Vessels

It is possible for you to overfill the vessels if you infuse too much fluid into the vessels during the refill process. If you use an IV bag, it reduces the likelihood that this will occur unless the IV bag is placed at an elevation significantly higher than the training platform.

It will be obvious when the vessels are overfilled when small dimples of ultrasound refill solution appear on the surface of the model at previous cannulation sites. Simply removing excess fluid and air from the vessels will alleviate this issue. Overfilling the vessels is unlikely to cause any permanent problems with your model but please take care to avoid overfilling.

# Caring for Your Training Model

# 5

## Proper Use and Care

Proper care of your training model will result in tremendous utility. Please heed all instructions contained in this user guide when using your model.

## Swapping Tissue Inserts

Swapping tissue inserts in and out of your Blue Phantom™ Central Line training model is a simple process that will take approximately 10 minutes. Follow the instructions below for Automated Pump and Hand Pump configurations.



**CAUTION:** If you are swapping the insert in your Automated Pump model, be sure to unplug the model from the power source before proceeding.

### Items Required

- Central Line Training Model
- Replacement Tissue Insert



For more information, please refer to our instructional YouTube movie on [How To Replace Ultrasound Tissue Inserts](#).

### Directions

1. If you are utilizing an Automated Pump model position the model upright on a flat surface and open the back panel of the model (refer to *Image D* on page 15 of this user guide). If you are utilizing a Hand Pump model, skip to step 3.
2. Once the back panel is open, locate the arterial QuickFill™ tube. Press the silver quick disconnect button (refer to *Image E* below) to release the arterial QuickFill™ tube. Gently release the arterial and venous tube from the back panel.
3. Position the training model lying flat on a stable surface.
4. If you own a model configured with a Hand Pump, press the silver quick disconnect button on the hand bulb to detach it from the arterial tube (refer to *Image F* to the right).
5. Holding onto the top of the tissue insert, gently lift the tissue insert module superiorly so that it pulls both the tissue insert and the arterial and venous tubes out of the model.



*Image F*

*(continued on next page)*

## Swapping Tissue Inserts (*continued*)

6. Completely remove the tissue insert module and the venous and arterial tubes from the base platform.
7. Now you are ready to insert the new or accessory tissue insert. Please refer to *Image G* below to determine the proper orientation of the tissue insert.



*Image G*

8. Prepare the new or accessory insert to be installed by removing the included hand bulb. Press the silver quick disconnect button on the hand bulb to detach it from the arterial tube (refer to *Image F* on page 20 of this user guide).
9. Guide the venous and arterial tubes into the hole at the base of the platform. Thread the tubes until the tissue insert reaches the recess in the base platform. Gently position the tissue insert into the recess until it is positioned flush with the surface of the central line platform.
10. Make any necessary adjustment to the tissue insert and the venous and arterial tubes so that the insert and tubes are properly positioned.
11. If you own a model configured with a Hand Pump, re-connect the hand bulb to the arterial line.
12. If you own a model configured with an Automated Pump, open the back panel and attach the arterial line to the pumping mechanism. Position the QuickFill™ tubes within the back panel and close the door (refer to *Image D* on page 15 of this user guide).



Your replacement tissue insert comes configured with a hand bulb. If you own a model configured with an Automated Pump, you may use the hand bulb to manually pump the arterial line when desired. To do so, disconnect the arterial line from the pumping mechanism and attach the hand bulb.

## Cleaning Your Training Model

After each use, your training model can be easily cleaned using mild soapy water. For best results, mix one part liquid soap with one part tap water. Gently rinse the model with the soapy water to remove any accumulated debris.

Use a clean, soft, lint-free cloth to dry after cleaning. Dry the model using a dabbing motion, rather than wiping or rubbing the model.



Wiping or rubbing the surface aggressively can result in scuffing the simulated tissue.

## Storing Your Training Model

The model can be stored at room temperature either in the open or in the Blue Phantom™ storage case (optional). Always store your Central Line training model positioned upright or lying on its back.



Do not store the model in contact with other objects. This can cause the simulated tissue to become deformed.

## Blue Phantom™ Customer Support

Blue Phantom™ is committed to providing you with superb products and uncompromising customer support. Should you require assistance feel free to contact us directly at:

Telephone: (425)881-8830

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