

**Gen II Femoral Vascular Access and
Regional Anesthesia Ultrasound Training
Model
BPF1500-HP**

Instructions and User Guide





Giving you the confidence only experience can offer™

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

About Blue Phantom

Blue Phantom™ brings you the most realistic and durable ultrasound hands-on training models available. 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 1 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 present availability.

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.

IMPORTANT SAFEGUARDS

1. Read Instructions – All safety and operating instructions should be read before the unit is operated.
Telephone: (425) 881-8830
Email: customersupport@bluephantom.com
Web: www.bluephantom.com
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings in the operating instructions should be adhered to.
4. Follow instructions – All operating and maintenance instructions should be followed.
5. 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 of adult, and serious injury to the unit.
6. CAUTION: Please use extreme care when using needles and sharp objects as to not accidentally injure yourself during training.

Femoral Vessels and Nerves Model Use and Care Instructions

Model # BPF1500-HP

Included in this package

- Thermoform Platform to keep model in place and for storage purposes
- Simulated Blood Refill Solution (reorder # BRS180 Red, BRS181 Blue)

Additional Items Required for Training not included in this package

- 21 Gauge needle for optimal performance (18-21 gauge range recommended)
- Ultrasound gel
- Ultrasound system with vascular access transducer
- Catheter kit (7 french catheter size recommended)

Introduction to Your Training Model

This model is intended as a platform for femoral venous access and regional anesthesia hands-on technique training. It performs equally well whether you are using ultrasound guidance or utilizing “blind” insertion techniques for femoral venous access. The model is designed to be extremely realistic and its self-sealing 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.

Care Instructions

Anatomy of Your Training Model

Remove your training model from its shipping container and make sure that you have received all of the items listed in the “Included in this package” above. If you did not receive one or more of the listed items, please contact Blue Phantom Customer Support immediately by calling (425) 881-8830 or emailing customersupport@bluephantom.com

Begin by familiarizing yourself with the anatomy of your training model.

Using Your Training Model

1. 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.
2. Adjust the ultrasound system controls per the manufacturer’s instructions, increasing and decreasing the depth and gain controls until the desired image is obtained.

Using Needles and Catheters

1. In order to experience the best performance from your training platform, it is IMPORTANT that you use the appropriate-sized needles and catheters on your model. For the best performance, we recommend that you utilize a new 18 - 21 gauge needle and similarly sized 7 french catheter kits when accessing the vessels in the model. While Blue Phantom tissue simulation materials will tolerate larger bore needles, their use may cause needle tracks to take longer to absorb or even become permanent. Do not use any needle larger than 18 gauge or permanent damage to your model may occur. Smaller bore needles (>22 gauge) used aggressively can bend during use and damage your model as the needle tip is dragged through the material rather than coursing smoothly through the tissue. Dull needle tips create the same dragging effect and may also cause permanent damage to the tissue. Therefore, it is important to replace needles about every ten cannulations.

CAUTION: Please use extreme care when using needles and sharp objects as to not accidentally injure yourself during training.

Using Hand Pumps

The model is equipped with 2 separate hand bulbs. (Pictured below). The Light-blue hand bulb is the larger hand bulb. Users can squeeze this hand bulb to increase the pressure in the red arterial system. This increase in pressure in the system allows the artery diameter to remain unchanged, while the venous vessel will collapse when imaged by ultrasound. The pressure created by this hand bulb remains for about 30 seconds, after which the user can repeat the process.

The smaller bulb is to be squeezed to simulate pulsatile arteries. (every squeeze results in pulsation of the arteries in the model)



CAUTION: Accessing arteries with the Pulsed models may result in the presence of simulated blood dimples at the site of previous cannulations.

Accessing & Refilling the Simulated Vessels

1. The simulated blood contained within the model's blood vessels is a specially formulated fluid offering optimal performance of the model. It is very important that you only utilize Blue Phantom's simulated blood refill solution. Using other fluid will cause problems, including: change in the imaging qualities of the blood vessels, reduction in the ability to thread catheters, and fungal and bacterial growth within the vessels.

USING FLUID OTHER THAN THAT SUPPLIED BY OR PURCHASED THROUGH BLUE PHANTOM WILL VOID YOUR WARRANTY.

2. One of the methods of differentiating between the simulated arteries and veins is the color of the fluid contained within the vessels. Red fluid is consistent with the blood in the arteries and blue fluid identifies the veins.
3. Users can remove fluid after the veins have been properly accessed to confirm needle placement. Please note that any fluid withdrawn from the vessel will require refilling.
4. It is important to maintain a good fluid level within the simulated blood vessels.
 - A. Using ultrasound: An optimally-filled vessel will be identified by the presence of a black, echo-free lumen (refer to image C below). A low fluid environment is identified by the inability to visualize the vessel(s) during normal imaging situations. This is due to the presence of air within the vessels, which will reflect all of the sound energy (refer to image D below).
 - B. Non-imaging; the presence of air in the Quick Fill tube.

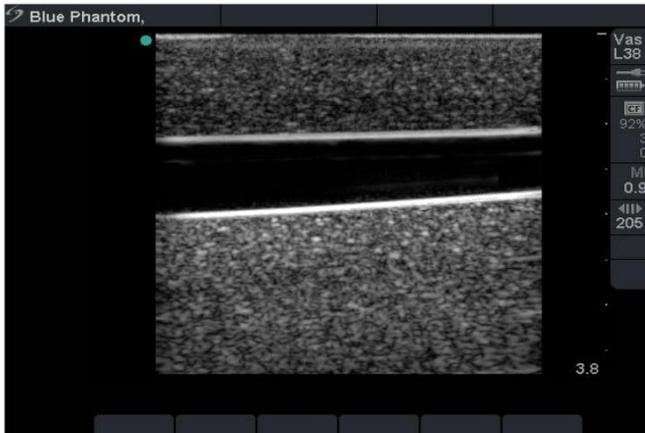


Image C



Image D

6. There is a number of acceptable ways to refill the simulated vessels. Choose the method that works best for your training environment.
- A. **Injecting fluid after each cannulation.** By far the simplest way to maintain a good fluid level in the vessels is to have users inject the accessed fluid back into the model after gaining access to the vessel. This is limited to users that are not performing the entire catheter placement procedure.
 - B. **Using the Quick Fill luer lock fill port.** High volume users will benefit from connecting an I.V. bag containing Blue Phantom™ Simulated Blood Refill Solution to the luer lock located on the superior portion of the training platform. As users withdraw fluid from the veins, the fluid automatically refills the vessels. Please note that this will only ensure the femoral veins are optimally filled with fluid; the femoral artery requires syringe filling (refer to letter D below).
 - C. **Users can also use a syringe and Quick Fill port.**
 - 1.) Fill a syringe with the Simulated Blue Phantom refill solution with approximately 5 ml.
 - 2.) Place the model in an upright position (torso in standing position) and note whether air is present in the Quick Fill tube.
 - 3.) If you cannot visually confirm the presence of fluid in this tube, the vessels require refilling.
 - 4.) Connect the filled syringe's luer lock female connector to the male connector on the Quick Fill Port.
 - 5.) Slowly inject fluid into the tube making sure that you remove air after each 5 ml insertion.
 - 6.) Remove air by pulling back on the syringe plunger after each 5 ml injection.
 - 7.) Continue these processes until the vessels are full and all air is purged from the model's vessels.
 - 8.) Care must be taken as to avoid overfilling the vessels with fluid or not purging air from the vessels.

Blue Venous vessel tubes are equipped with a cap, user can simply remove cap and connect syringe to refill.
Red Arterial vessel tubes are fitted with a "y" connector. User can simply remove cap from the y end (the other end has a hand bulb) and follow the method outlined above.

CAUTION: Use refill solution 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 may stain clothing; wash immediately with cold soapy water. Keep out of reach of children.

Overfilling the Vessels

It is possible for you to overfill the vessels if you inject too much fluid into the vessels during the refill process. If you use an IV bag, it is much less likely that this will occur unless the I.V. 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 simulated blood appear on the surface of the model at the site of previous cannulations. Simply removing excess fluid and air from the vessels will alleviate this issue. Overfilling the vessels will unlikely cause any permanent problems with your model but take care to avoid overfilling.

Cleaning and Storing Your Model

After each use your model can be easily cleaned using mild, soapy water. Use a soft cloth to dry after cleaning. It is preferred to dab the tissue dry rather than rubbing it, as this will help preserve the finish of the tissue by minimizing scuffing. The model can be stored at room temperature.

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Blue Phantom Offers 30 day money back guarantee as well as One year warranty on all products: Please see details below.

- (a) Customer will be responsible for all shipping expenses. (Blue Phantom will cover shipping charges for repair/replacement parts if the product is defective within 60 days of purchase)
- (b) The defective part of product will be replaced by Blue Phantom either with a new or reconditioned part or product, depending on the availability at the time of replacement at no cost to the Customer.

Warranty Exclusions:

The foregoing warranties of Covered Products do not cover:

- (a) Any defect of deficiency of the Product that results, in whole or in part, from
 - (1) failure to operate, maintain or store the Product in accordance with applicable instructions and User Guide specifications,
 - (2) the dismantling, repair or alteration of the Product by unauthorized personnel ,
 - (3) abuse or improper storage of the Product,
 - (4) failure to use the Product in accordance with its specification,
 - (5) accidental damage,
 - (6) failure to follow Blue Phantom's written instructions.
- (b) Damage to or malfunction of Product due in whole or in part to (1) disinfecting or cleaning incorrectly with chemicals or cleaners not recommended by Blue Phantom.
- (c) Intention damage to a Product.
- (d) Products that are subjected to negligence, accident, vandalism, or disasters such as flood, fire or war

Help and Technical Assistance

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 (425) 881-8830.