



# ULTRAPHANTOM

## basic

User guide



# Contents

## Overview

|                                   |   |
|-----------------------------------|---|
| Training, Skill, Confidence ..... | 3 |
| About “Ultraphantom” .....        | 3 |
| “Ultraphantom” Warranty .....     | 4 |

## Product Cautions

|                            |   |
|----------------------------|---|
| Important Safeguards ..... | 5 |
|----------------------------|---|

## Product Information

|  |   |
|--|---|
| Information About Your Phantom .....         | 6 |
| Included in this Package .....               | 6 |
| Additional Items Required for Training ..... | 6 |
| Introduction to Your Training Model .....    | 7 |
| Quick Facts About Your Training Model .....  | 7 |

## Utilizing Your Phantom

|   |    |
|---|----|
| Unpacking .....                                     | 8  |
| Using Your Phantom .....                            | 8  |
| Using Needles and Catheters .....                   | 9  |
| Accessing Simulated Blood Vessels .....             | 9  |
| Maintaining Optimal Fluid Level .....               | 9  |
| How to Determine if Vessels Require Refilling ..... | 10 |
| Refilling the Simulated Blood Vessels .....         | 10 |

## Care and Storage

|                               |    |
|-------------------------------|----|
| Caring for Your Phantom ..... | 12 |
| Cleaning Your Phantom .....   | 12 |
| Phantom Storage .....         | 12 |

## Overview



### Training, Skill, Confidence

Congratulations on your purchase of a phantom for hands-on ultrasound training. Each phantom we manufacture is specifically designed to give you the most realistic experience right at your workplace. Our high standards of manufacturing and development quality guarantee you the best result.

### About “Ultraphantom”

“Ultraphantom” offers you the most realistic and reliable practical models for obtaining ultrasound skills. We know that learning to use ultrasound takes practice. You will gain confidence and mastery through experience. That's why we bring you the best ultrasonic simulation phantoms.

## “Ultraphantom” Warranty

We pride ourselves on the quality of our design and production standards. We provide you with a one year warranty on our products from the date of purchase against defects in workmanship and materials. During the warranty period, a defective phantom will either be replaced with a new one or refurbished.

This warranty covers normal consumer use and does not cover damage resulting from use not in accordance with the design of the phantom. This warranty does not cover failure resulting from modification, accident, misuse, vandalism or negligence. This warranty does not apply to phantoms that have been used in violation of these instructions.

## Product Cautions

Please read this manual carefully! Do not start using the phantom until you fully understand all safety precautions and read the user manual completely.

### Important Safeguards

1. Read the instructions. Read all safety and operating instructions before using the phantom.
2. Save the instructions. The safety and operating instructions should be retained for future reference.
3. Pay attention to warnings - all warnings in the operating instructions must be observed.
4. Follow the instructions. All operating and maintenance instructions must be followed.
5. Care must be taken to place the phantom in a position where it will not fall off the surface, especially onto other objects, as this may result in non-warranty damage to the phantom.
6. **Attention!** Be extremely careful when handling needles so as not to accidentally injure yourself during training.



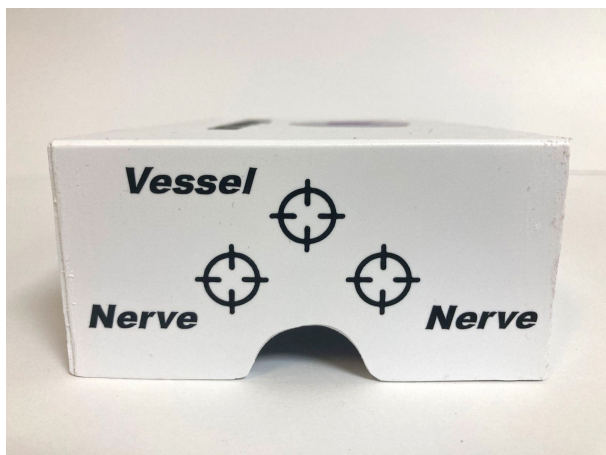
## Product Information

### Information about your phantom

“Ultraphantom” basic — a block with one vessel and two nerves.

### Included in this Package

1. “Ultraphantom” basic — 1 pc.
2. A plastic box for storing the “Ultraphantom” with an indication of the location of the vessel and nerves.
3. This instruction.



### Additional Items Required for Training

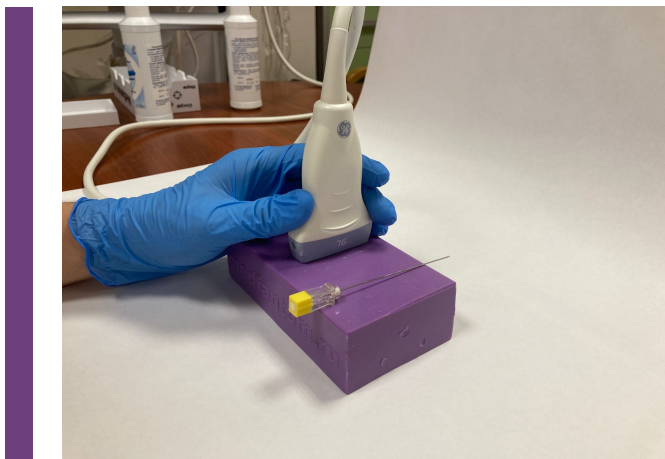
1. For best results, use a sharp, uncurved needle size 18–21.
2. Ultrasound gel.
3. Ultrasound machine.

## Introduction to Your Training Model

“Ultraphantom” is designed for practical training in the technique of working with ultrasound. The phantom is designed to be extremely realistic, and its self-healing design provides superior durability. In order for your phantom to serve you for a long time, it is important that you properly care for it.

## Quick Facts About Your Training Model

- Durable self-healing material.
- Flat surface for easier navigation.
- Contains an artificial blood vessel.
- Contains two artificial nerves.
- The needle is clearly visualized not only when it is parallel to the sensor, but also from different angles.
- Easy refilling of the vessel.
- Recyclable.
- Made in Russia.



# Utilizing Your Phantom

## Unpacking

Take the phantom out of the plastic box. Make sure you have received everything listed in the “Phantom Information”, “Package Contents” chapter. If you discover a shortage or receive the wrong phantom, contact your supplier or manufacturer immediately to correct the situation.

## Using Your Phantom

- Take your phantom out of the box.
- Check out the phantom.
- Lay “Ultraphantom” on a clean, hard, level, stable surface.
- Apply ultrasound gel to the phantom or ultrasonic transducer in sufficient quantity so that the transducer slides easily over the surface of the phantom. Add more gel if needed.
- Adjust your ultrasound according to the manufacturer's instructions, increasing and decreasing depth and gain until the desired image is obtained. Keep in mind that the vessel is at a depth of 2 cm, the nerves are at a depth of 3 cm. Your phantom box has targets approximately where the nerves and the vessel are located.
- Save the plastic box for future storage of your phantom.

The phantom is made of a soft polymer to closely match human tissue on ultrasound, so if you place it on a rough surface it may take the shape of that surface, and if you place it on sharp or bulging objects they may damage your phantom.

Remember that you can pierce the phantom with a needle, do not place the phantom on surfaces that you can damage with a needle.

Before inserting the needle into the phantom, make sure that you do not inadvertently harm yourself or others.





## Using Needles and Catheters

It is best to use a new, sharp, unbent 18–21 gauge needle and similarly sized catheter sets when accessing phantom structures.

Do not use needles larger than 18G as this may permanently damage your phantom.

Smaller diameter needles (size >21) may bend during use and damage the material of the phantom.

Aggressive handling of the needle inside the phantom, instead of removing and repositioning, can result in persistent or permanent needle traces.

Blunt needles can also cause permanent damage to the phantom. It is important to change the needles approximately every ten injections.

## Accessing Simulated Blood Vessels

You can remove some fluid after the vessel has been properly catheterized to confirm needle placement. Please note that any liquid removed from the vessel will require refilling.

**Warning!** The use of plain water will alter the visualization of the vessel, reduce the possibility of insertion of catheters, and cause the growth of fungi or bacteria in the vessel. We recommend using hydrogen peroxide to fill the vessel.



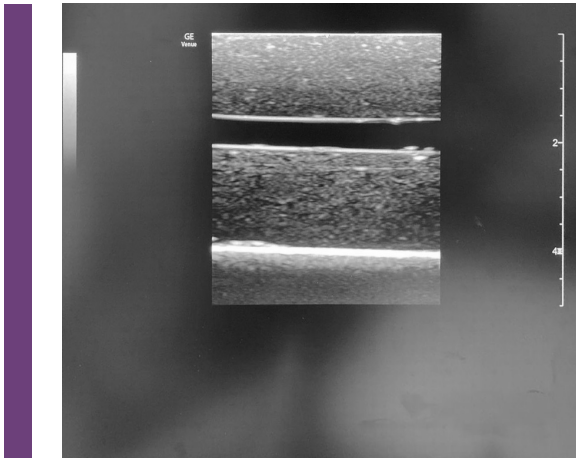
## Maintaining Optimal Fluid Level

It is important to maintain a good fluid level in the simulated blood vessel. With repeated use, a decrease in the amount of liquid may occur, resulting in a small amount of air in the vessel. This directly depends on the amount of fluid extracted during training. Filling methods are described later in this manual.

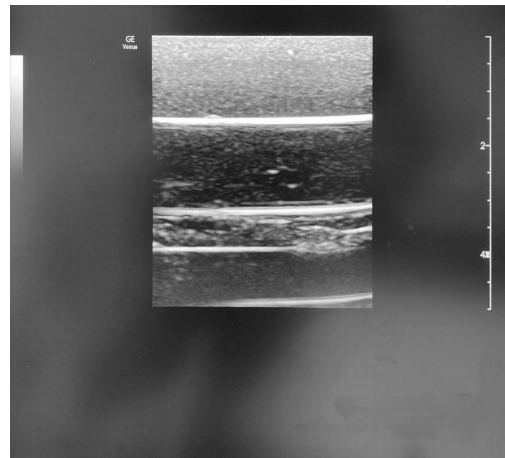
## How to Determine if Vessels Require Refilling

If the ultrasound visualization of the vessel in your phantom has become blurry (it should appear as a clear black line parallel to the surface), you most likely need to top up the fluid level.

The easiest way to maintain the optimal level of fluid in the vessel is to inject the resulting fluid back into the phantom immediately after accessing the vessel.



The look of vessel filled.



The look of empty vessel.

## Refilling the Simulated Blood Vessel

Filling your phantom vessel is a simple process that will take approximately 15 minutes. Please follow the instructions below.

You will need:

- Syringe with needle size 18–21.
- Hydrogen peroxide.
- The phantom itself.

Locate the vessel access point on the lateral surface of the phantom. It looks like a rounded hole 6 mm in diameter in the center of the side of the phantom. You need exactly the central fossa, two other fossae on the same side indicate the location of the nerves.

Position the phantom so that the access point to the vessel is directed upwards.

Gently tap the vertical phantom for about 60 seconds. This will allow the accumulated air in the vessel to move to the top of the vessel.

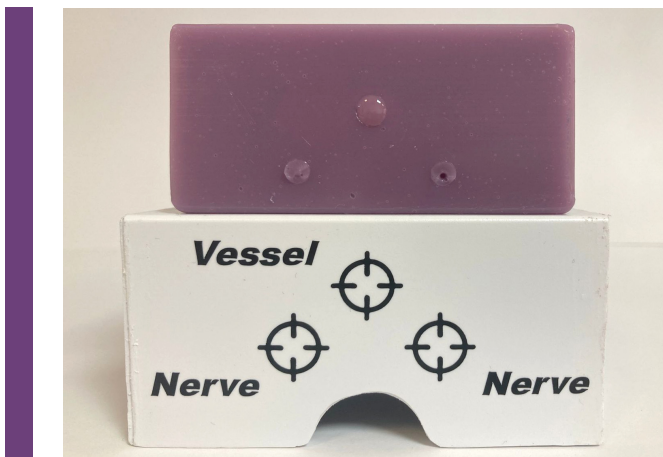
Draw hydrogen peroxide into the syringe.

While holding the phantom, insert the needle into the access site to a depth of approximately 3 cm.

Determine the top of the vessel by slowly withdrawing the syringe while trying to retract the plunger of the syringe. When you exit the vessel, you will feel resistance as you try to retract the plunger.

Slowly inflate the phantom in 1 ml increments. After every 1 ml, pull the plunger back to remove air from the vial.

Overfilling the vessel can lead to small leaks at past puncture sites. Just wipe the spilled liquid with a tissue.



Vessel is located in the upper part of the phantom.

## Care and Storage

### Caring for Your Phantom

Proper care of your phantom will extend its lifespan. Follow all instructions in this user manual when using your phantom.

### Cleaning Your Phantom

After each use, the phantom can be easily cleaned with a mild soap solution. It is best to take one part liquid soap and mix it with one part tap water. Wash the phantom gently with soapy water to remove accumulated debris.

Use a clean, soft, lint-free cloth to dry after cleaning. Dry the phantom by applying wipes, not by wiping or rubbing it.

### Phantom Storage

The phantom can be stored at room temperature in the box it came in. Do not store the phantom close to heaters or in direct sunlight.