

MEDICAL SIMULATION PRODUCT MANUAL

IV and Venipuncture Wrist & Hand Model

Model VHM-01

Applicable Models: VHM-01, VAM-01



Intended Use

The IV and Venipuncture Wrist & Hand Model 1 (VHM-01) is an educational training tool designed specifically for phlebotomy and venipuncture practice. The Artimed Venipuncture Wrist & Hand Model provides a realistic practice experience through anatomically accurate vein placement and responsive tactile feedback.

Constructed from advanced modified silicone that closely replicates the texture and feel of human skin, the model allows trainees to practice vein palpation, needle insertion, and blood collection techniques in a controlled training environment.

Designed for repeated use, the model can withstand up to 1,000 needle insertions before leakage may occur. After approximately 400 needle insertions, visible puncture marks or wounds may develop on the skin surface. This does not necessarily indicate a loss of functionality, provided that the model remains free from leakage and continues to perform as intended.

The model is intended to assist qualified instructors in training healthcare students and professionals. It is not a substitute for training on or clinical practice with human patients and should be used under appropriate instructor supervision.

INTENDED FOR THE FOLLOWING TRAINING PURPOSES:

- Intravenous (IV) injection practice
- Butterfly catheter placement
- Peripheral vein puncture (basilic, cephalic, dorsal metacarpal veins)
- Infusion setup and monitoring, incl. securing the cannula with dressings

IMPORTANT NOTES

This product is intended for educational use only and must not be used on patients or in clinical settings.

Always follow proper sharps handling protocols during training sessions, including safe disposal of needles and other sharp instruments.

Replace worn components (e.g., skin pad, blood bag or artificial blood) as needed to maintain training accuracy and realistic simulation.

Storage & Cleaning

Storage

Do not store the product while filled with simulated blood. Drain all fluid before storage to prevent residue buildup, odor, or material degradation.

Cleaning

The manikin may be cleaned using mild soap and water. After cleaning, allow the manikin to air dry completely before applying a light layer of talcum powder to help maintain the surface condition and product stability.

CAUTION

Do not use chemical solvents, including benzene, thinner, or other harsh cleaning agents. These substances may damage or deteriorate the surface material and may present a fire or ignition hazard.

Handling & Safety Precautions

Please read the following instructions carefully before use. Proper handling ensures user safety and helps maintain the product's lifespan.

01 Health and Allergy Information This arm contains talcum powder, which may cause an allergic reaction in some individuals. If irritation or a reaction occurs, discontinue use immediately and seek medical attention.	02 Fluids and Materials Use only the simulated blood supplied with this product. Non-recommended fluids may damage internal components or shorten the product's lifespan. Use only needles and cannulas of the recommended gauge.
03 Physical Handling Avoid contact with jewelry, fingernails, or other sharp surfaces, as these may tear or damage the silicone skin. Handle it with the same care and respect you would give an actual patient.	04 Environmental Conditions Do not use in temperatures below 4°C (39.2°F) or above 40°C (104°F). Keep away from heat sources or open flames. Store in a cool, dry place away from direct sunlight.

Material Specification

The simulation model is constructed from modified silicone and natural rubber, providing a balance of durability, flexibility, and realistic tactile properties. The material has a Shore A hardness of 20–40, depending on the specific component and application, to approximate the texture and mechanical properties of human skin.

The primary skin material has been developed through research and development to replicate key physical characteristics of human skin, including surface feel, palpation response, resistance, and needle penetration.

KEY MATERIAL PROPERTIES INCLUDE:

Durability and flexibility

Provides sufficient strength and flexibility to withstand repeated training and respond naturally during needle insertion.

Self-recovery

The material exhibits self-recovery properties after needle insertion, helping to minimize the appearance of puncture marks and simulate the recovery characteristics of human skin.

Realistic tactile response

Provides resistance and penetration sensations during needle insertion and fluid administration, supporting realistic venipuncture practice.

Customization

Selected material properties can be customized before production, including surface flexibility and skin color, according to specific training requirements.

Cleaning and disinfection

The material surface is compatible with 70% ethyl alcohol and 2% chlorhexidine gluconate in 70% ethyl alcohol for routine cleaning and disinfection. When used as recommended, these solutions are not expected to adversely affect the material's intended performance.

Package Content

- 1 Upper part hand (skin pad)
- 2 Lower part hand
- 3 Hand rest
- 4 Blood bag
- 5 Stand
- 6 Tube connector
- 7 Vein clamp

RECOMMENDED CLINICAL SUPPLY SIZE
Needle 18G.–24G.

INSTRUCTIONS FOR USE

A. Arm Assembly

- 1 Position the upper part hand (skin pad) and lower part hand, ready for assembly.
- 2 Align the upper part hand (skin pad) with the lower part hand. Press down firmly along the length of the sliding track (as indicated by the arrows) until the sleeve locks securely into place along the groove.

NOTE

Ensure all parts are fully seated and locked before use. Do not force pieces together — if resistance is felt, check the alignment of the groove and connector.

B. Blood Bag & Stand Assembly

- 1 Place the hand model into the hand rest until fully seated, or place it near the hand rest.
- 2 Attach the stand by inserting its legs into the hand rest.
- 3 Hang the empty blood bag on the top knot of the stand.
- 4 Connect the tube-connector to the spike port at the bottom of the blood bag. Push upward until securely locked.
- 5 Attach vein clamps to both veins.
- 6 Complete the tube-connector assembly with the vein.
- 7 Align the second blood bag's connector port with the tube-connector stem and push upward to attach.
- 8 Insert the funnel into the top port of the blood bag and pour in the simulated fluid.

NOTE

Hang the bag around 45 cm or more above the level of the arm.

C. Install the System

- 1 Loosen the vein clamp onto the tubing line by pressing it open, positioning it over the tube, and closing it securely after the fluid runs through the vein.
- 2 Confirm fluid flows from the upper blood bag through the tubing into the lower collection bag. The system is now ready for practice use.

D. Reposition the Blood Bag

- 1 Lift the empty blood bag from the stand.
- 2 Move the empty blood bag down to the lower position, keeping tubing connections intact.
- 3 Hang the filled blood bag on the stand in the upper position.

E. Clamp the Line to Replace the Blood Bag

- 1 Close the vein clamp, position it over the line, and close it to stop fluid flow.
- 2 Disconnect the fitting at the bag's port to remove or replace the blood bag.

F. Cleaning System

- 1 Open the tubing clamp to flood fluid.
- 2 Drain remaining fluid from the blood bag into a collection cup.
- 3 Disconnect the tube-connector from the vein.
- 4 Flush the vein lines with clean water or cleaning solution into a cup.
- 5 Wipe down the hand model using a soft cloth or sponge with warm water and detergent.
- 6 Leave it to dry and cover the hand model with talcum powder.

IMPORTANT

Clean the product using a soft cloth or sponge with warm water and detergent. Drain all fluids before storage or transportation.

Troubleshooting

Blood Flow Issues

If blood does not flow through the arm, there is likely a restriction somewhere within the system. Common causes include air bubbles or dried blood residue in the tubing. Work through the steps below to identify and resolve the issue.

- ① Check for Kinks in the Tubing**
Inspect the tubing connected to the fluid supply bags. If a clamp has remained in the same position for an extended period, the tubing may develop a kink, restricting flow even when the clamp is open. Gently massage the affected section of tubing to reopen the passage. Reposition clamps regularly during storage to prevent future kinks.
- ② Check Fluid Supply Bag Height**
Ensure the fluid supply bag is hung at the height specified in this manual. Incorrect height may result in insufficient flow pressure.
- ③ Check for Air Bubbles in the System**
Slowly open the supply clamp to flush the system with simulated blood gradually. Allow fluid to flow through until all air bubbles are eliminated from the drain bag. Close the clamp, turn the arm palm-up, then slowly reopen the clamp to release any remaining trapped air.
- ④ Check for Dried Blood Residue (Previously Used Arms)**
If the arm has been used before, dried sediment may have accumulated in the tubing. Using a syringe, flush the system with clean water to clear any blockages.
- ⑤ Check Connections and Injection Points**
Inspect all vein module connections to confirm they are properly seated. If there is no visible leakage but flow remains restricted near common injection sites, this may indicate the skin-pad module requires replacement.

General Information

PRODUCT NAME	IV and Venipuncture Wrist & Hand Model 1
MODEL	VHM-01
MANUFACTURER	Artimed
COUNTRY OF ORIGIN	Thailand
DIMENSIONS (L × W × H)	26 × 10 × 6.5 cm
WEIGHT	1 kg

Warranty

2 Year Warranty

A 2-year warranty covers all products manufactured by Artimed. This warranty applies to models that have been used appropriately and covers both durability and functionality.

Contact Support

If you require further information, please get in touch with our sales department. We will be pleased to assist you with your enquiry.

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