

Central Venous Puncture Trainer

LM-090

Instruction Manual

Thank you for purchasing the Central Venous Puncture Trainer.
Please read this instruction manual carefully to ensure correct use of the product,
and store it in a safe place for easy access.

KOKEN CO., LTD.

1-4-14 Koraku, Bunkyo-ku, Tokyo 112-0004 JAPAN

URL:<http://www.kokenmpc.co.jp>

E-mail:customer@kokenmpc.co.jp



Handling and Safety Precautions

These precautions should be strictly observed in order to ensure safe, long-term use of the product.

The following precautions should be observed particularly strictly:

- This model has been manufactured to feel like a living human body to the touch. Improper handling may cause damage.
 - Be sure to use ultrasound gel when using a probe. In addition, applying the probe to the internal jugular and subclavian venous puncture sites with excessive force may cause indentations or cuts to the puncture site surface.
 - Please do not place objects on the main body of the training model. Doing so may deform the model.
 - Wipe away difficult-to-remove stains with gauze soaked in water or a neutral cleanser that has been diluted with water. Do not use solvents such as paint thinner or benzene. Doing so may cause discoloration or deformation of the training model.
 - Do not use oil-based inks, paints or similar substances on this product under any circumstances. Doing so will cause stains that cannot be removed.
 - In producing the internal jugular and subclavian venous puncture sites, our priority was to recreate a realistic puncture sensation and lifelike skin. Intensive puncture of any specific part of the blood vessel alone may require replacement of the puncture site much sooner. Avoid repeated use of the same part of the puncture site to the greatest extent possible.
- * Using a hypodermic needle wider than 20 G may require replacement of the puncture site much sooner. If at all possible, use a 20 G or narrower hypodermic needle.

- The holes that result from puncturing the internal jugular and subclavian venous puncture sites will not close up. Creating punctures near puncture holes, applying the probe with force to the puncture sites or creating pressure within the blood vessels by means such as pressing the bulb of the blood bag will cause simulated blood to seep out. When this occurs, wipe away the simulated blood and continue use.
- This model has been manufactured for the purpose of practicing exploratory puncture. The model cannot be used for main puncture, guide wire insertion, dilator insertion, scalpel incision or catheter insertion.
- Store in a place where the product will be protected from direct sunlight and ultraviolet radiation. Long-term exposure to direct sunlight or ultraviolet radiation will cause discoloration of the product.
- Store the product in its bag when it is not in use.
- This product is intended for use in standard operating environments. Do not use it in heavy industrial settings.
- This model uses urethane foam for some of its parts, and may be susceptible to damage from pests that are attracted to urethane foam (such as insects in the ant family).
When storing this model, ensure that thorough measures are taken to prevent pest damage before storing. The company will not be involved with or held liable for pest damage that occurs during storage.

1. The contents of this instruction manual are subject to change without notice.
2. This operation manual cannot be reproduced in whole or in part without permission.
3. Please notify us in the event that you find any errors or omissions in the contents of this operation manual.
4. Please use the product according to the instructions in this operation manual. In particular, refrain from use contrary to the methods given in the precautions.

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1. Outline and Features

Outline:

This model can be used to practice the procedures of internal jugular venous puncture, subclavian venous puncture and supraclavicular venous puncture using ultrasound imaging equipment.

Features:

- Simulated blood can be drawn when the hypodermic needle enters the vein.
- Puncture is possible with negative pressure applied to the syringe.
- Air can be drawn when the lung is punctured by mistake.
- Silicone rubber is used for the puncture sites, giving an appearance and feel similar to that of a living human body and lending a sense of realism to training.
- All puncture sites can be replaced.
- Puncture sites can be identified using anatomical landmarks.

2. Components



	Names of the Components	Quantity
1.	Central Venous Puncture Trainer Main Body	1 unit
2.	Internal Jugular Venous puncture Site for Ultrasound	1 pc
3.	Subclavian Venous puncture Site for Ultrasound	1 pc
4.	Blood Bag	1 pc
5.	Simulated blood (Dark Type)	1 pc
6.	Syringe	1 pc
7.	Accessory Case	1 pc
8.	Storage Bag	1 pc

※ Do not throw away the bags containing the main body of the Central Venous Puncture Trainer and the subclavian and internal jugular venous puncture sites for ultrasound. Please use these bags for storage.

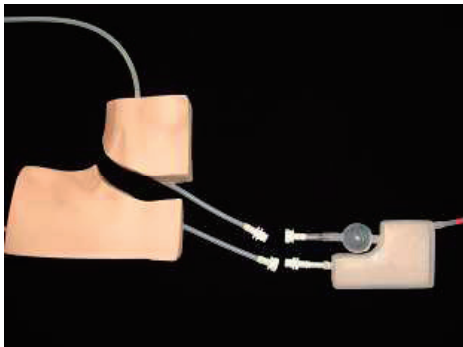
3. How to Set-up the Internal Jugular and Subclavian Puncture Sites for Ultrasound

※ A special material is used for the puncture sites in order to achieve a realistic puncture sensation. As a result, the surfaces of the puncture sites are sticky. Before use, wash with a neutral cleanser that has been diluted with water or wipe the surfaces of the puncture sites with ethanol or a similar substance.

※ A special polymer material has been used for the puncture sites, with ultrasonic characteristics differing from that of a human body. When using this product, please adjust the sensitivity of the ultrasound imaging equipment you are using accordingly. Depending on the type of ultrasound imaging equipment you are using, it may not be possible to obtain a clear image even when the equipment is adjusted to the same sensitivity.

1. Attach the white connectors of the internal jugular venous puncture site for ultrasound (referred to hereafter as the 'internal jugular venous puncture site') and the subclavian venous puncture site for ultrasound (referred to hereafter as the 'subclavian venous puncture site') to the connectors of the blood bag.

※ Leakage may occur if the connection is not tight. Please ensure that you have made a secure connection.

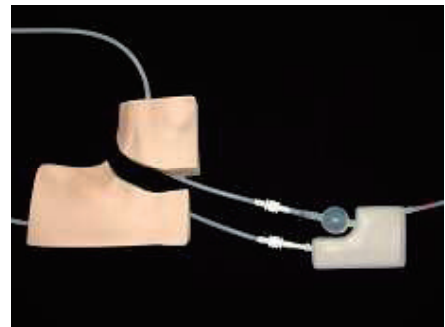
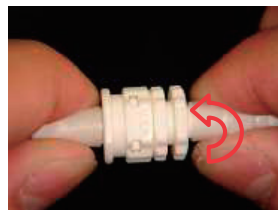
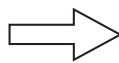
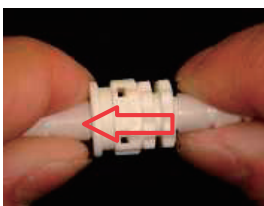


Internal Jugular Venous puncture Site Side

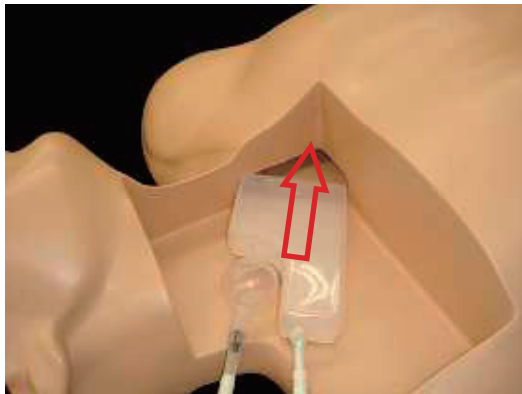


Subclavian Venouspuncture Site Side

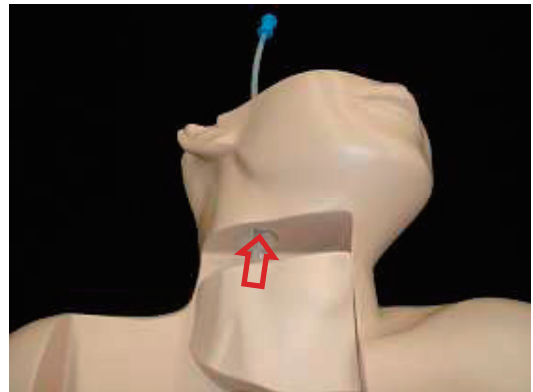
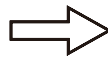
When attaching the connectors, hold both connectors, insert the male connector into the female connector as far as it will go and rotate 90 degrees.



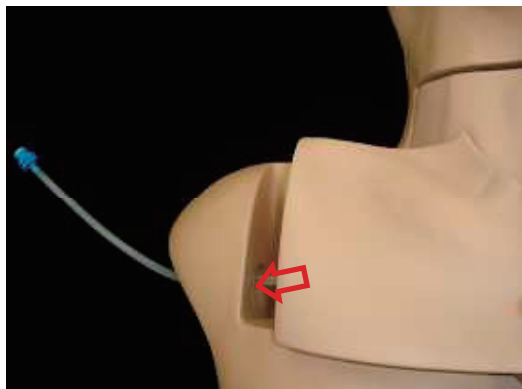
2. Introduce the blood bag into the left side of the chest of the main body of the Central Venous Puncture Trainer, as shown in (1) below, and lead the blue connector of the internal jugular venous puncture site through the hole in the head of the main body of the Central Venous Puncture Trainer, as shown in (2). Lead the blue connector of the subclavian venous puncture site through the hole in the right side of the chest of the main body of the Central Venous Puncture Trainer, as shown in (3).



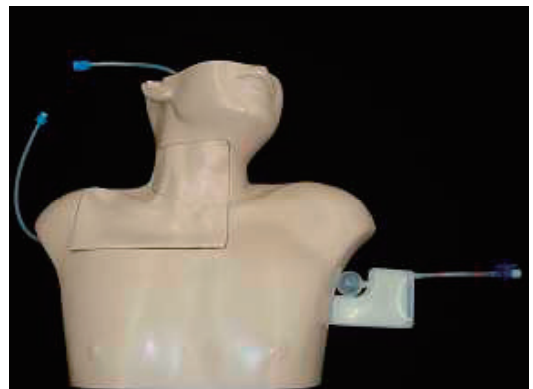
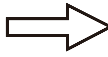
(1) Introduce the blood bag.



(2) Lead the connector of the internal jugular venous puncture site through the hole.

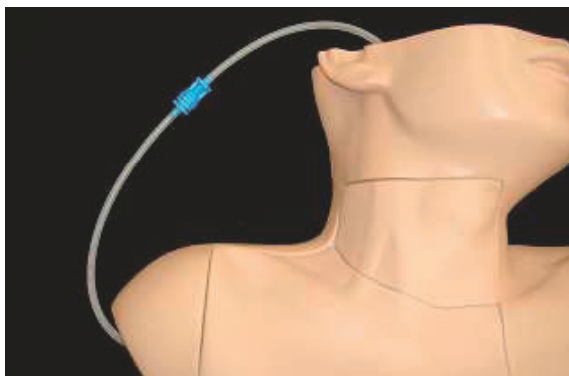


(3) Lead the connector of the subclavian venous puncture site through the hole.

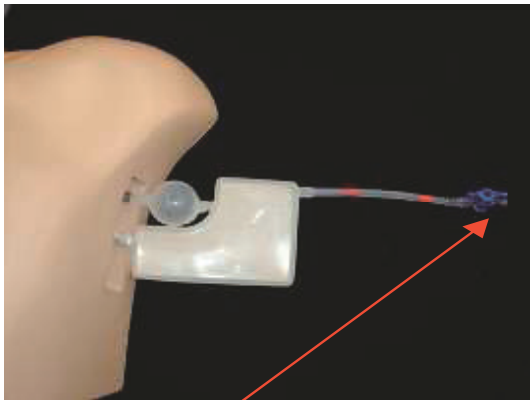


(4) Set the internal jugular and subclavian venous puncture sites up in the main body of the Central Venous Puncture Trainer.

3. Attach the blue connectors of the internal jugular and subclavian venous puncture sites to each other. Connect them in the same manner as the white connectors.



4. Set the included syringe up in the 2-way valve, withdraw the air in the blood bag and close the valve (i.e., create negative pressure in the blood bag).



2-Way Valve



2-Way Valve Open



2-Way Valve Closed

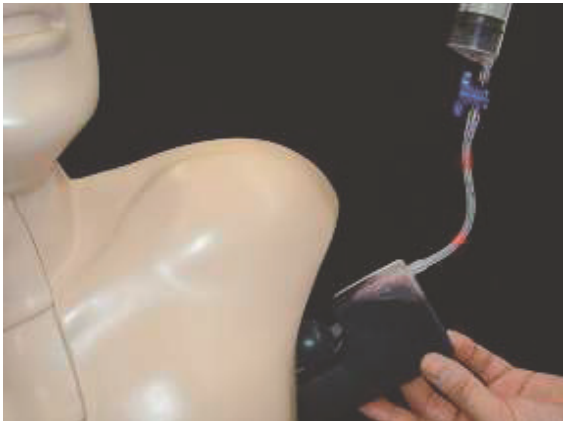
5. Introduce the simulated blood to the included syringe, set the syringe up in the 2-way valve and then open the valve and introduce approximately 120 cc of simulated blood into the blood bag. After injecting the simulated blood, close the 2-way valve.



6. Circulate the simulated blood by repeatedly squeezing the bulb, causing the air that is in the blood vessels to accumulate in the simulated blood bag. When doing so, tilt the main body of the Central Venous Puncture Trainer as shown in the figure below.



7. Use the syringe to withdraw the air that has built up in the blood bag to complete preparations. Apply ultrasound gel (not included) to the venous puncture sites and the ultrasound diagnostic probe and begin use.

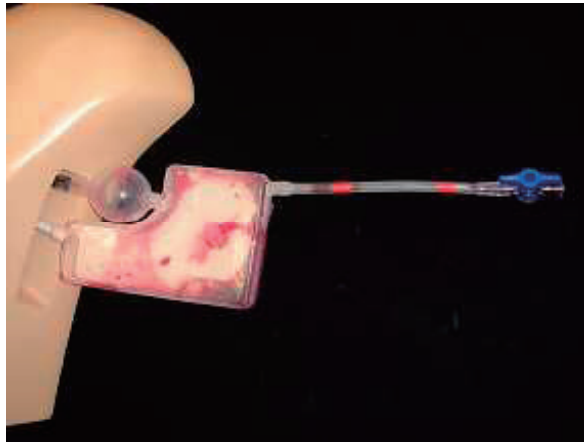


4. How to Replace the Internal Jugular and Subclavian Venous puncture Sites for Ultrasound

1. Insert the syringe into the 2-way valve of the blood bag and withdraw the simulated blood. Next, open the 2-way valve, introduce air into the blood bag and repeat withdrawal of the simulated blood. Repeat this operation 3-4 times.



(1) Withdraw simulated blood



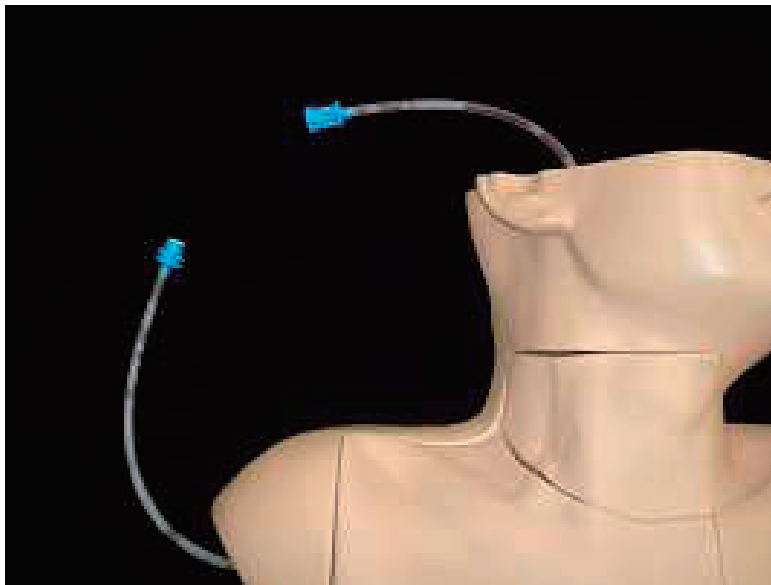
(2) Open the valve and introduce air



(3) Repeat withdrawal of simulated blood

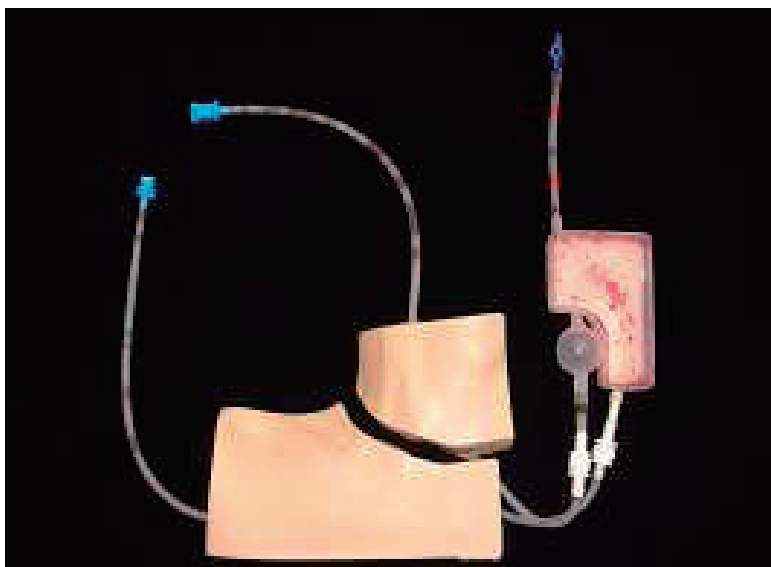
2. Disconnect the blue connectors that are joining the internal jugular and subclavian venous puncture sites. When doing so, grip both connectors and rotate them 90 degrees in the opposite direction from that in which they were turned when connecting them.

* Simulated blood will adhere to the tip of the male connector and the inside surface of the female connector when disconnecting them. Wipe off the simulated blood with a tissue and avoid staining clothes, etc.



3. Remove the internal jugular and subclavian venous puncture sites and the blood bag from the main body of the Central Venous Puncture Trainer. Please refer to "3. How to Set-up the Internal Jugular and Subclavian Venous puncture Sites for Ultrasound" when replacing the puncture sites.

* When removing the connectors of the venous puncture sites from the connectors of the blood bag, simulated blood will adhere to the tips of the male connectors and the inside surfaces of the female connectors. Wipe off the simulated blood with a tissue and avoid staining clothes, etc.



5. How to Maintain the Blood Bag and Internal Jugular and Subclavian Venous puncture Sites for Ultrasound

1. Open the 2-way valve and withdraw the simulated blood with the syringe.



2. Use the syringe to inject water into the blood bag through the 2-way valve and circulate the water by repeatedly squeezing the bulb. Next, use the syringe again to withdraw the water through the 2-way valve. Repeat this operation 4-5 times until the water is clear to completely remove the simulated blood that is adhering to the blood vessels and the interiors of the tubes.



(1) Introduce water to the blood bag.



(2) Circulate the water.



(3) Withdraw the water.

3. Remove the venous puncture sites and the blood bag from the main body of the Central Venous Puncture Trainer, referring to "4. How to replace the Internal Jugular and Subclavian Venous puncture Sites for Ultrasound". When the training model will not be used for a long period, dry well before storage.

6. How to Store

1. Place the main body of the Central Venous Puncture Trainer and the internal jugular and subclavian venous puncture sites in the resealable plastic bags that they came in when purchased.



2. Place the internal jugular and subclavian venous puncture sites, the blood bag and the syringe in the accessory case and seal the lid to store.



3. When packing the storage bag, please place the accessory case and simulated blood in the locations shown below.

* Be sure to store the simulated blood in an upright position.



Simulated blood

Accessory Case

4. Place the main body of the Central Venous Puncture Trainer in the storage bag, as shown in the figure below.



7. Specifications

Product name	Length	Width	Height	Weight
Central Venous Puncture Trainer Main Body	Approx. 37cm	Approx. 44cm	Approx. 13cm	Approx. 1.4 kg
Internal Jugular Venous Puncture Site for Ultrasound				Approx. 310g
Subclavian Venous Puncture Site for Ultrasound				Approx. 500g