

M93UB

CVC Insertion Simulator II

⚠ Caution | Don't mark on the model and other components with pen or leave printed materials contacted on their surface.
Ink marks on the models will be irremovable.

Instruction Manual



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Manufacturer's note

The simulator is designed for training in CVC procedures. Any other use, or any use not in accordance with the enclosed instructions, is strongly discouraged. Kyoto Kagaku Co., Ltd. cannot be held responsible for any accident or damage resulting from such use. Please use this model carefully and refrain from subjecting it to any unnecessary stress or wear. Should you have any questions or concerns regarding use of this simulator, please contact the distributor you purchased from or Kyoto Kagaku Co., Ltd.

● Features

The simulator comes with 3 kinds of training pads for relevant area and an introductory ultrasound training block.

■ Landmark puncture pad

Three possible accesses: subclavian, internal jugular and supraclavicular.

Carotid artery pulsation is palpable.

A guide wire can be inserted to SVC.

Success and failure confirmation

Jugular/artery puncture can be known by the color of the fluid you collect.

Pneumothorax: your syringe will collect air only.

Guide wire (catheter) placement and Mislodging can be confirmed by finding the wire in the right subclavian or SVC window on the torso.

■ Ultrasound puncture pad

An introductory training block to acquire basics of ultrasound-guided puncture.

Both internal jugular and axillary veins are accessible under ultrasound scanning.

Anatomically correct vein and artery relationship.

Veins collapse under light pressure of the probe.

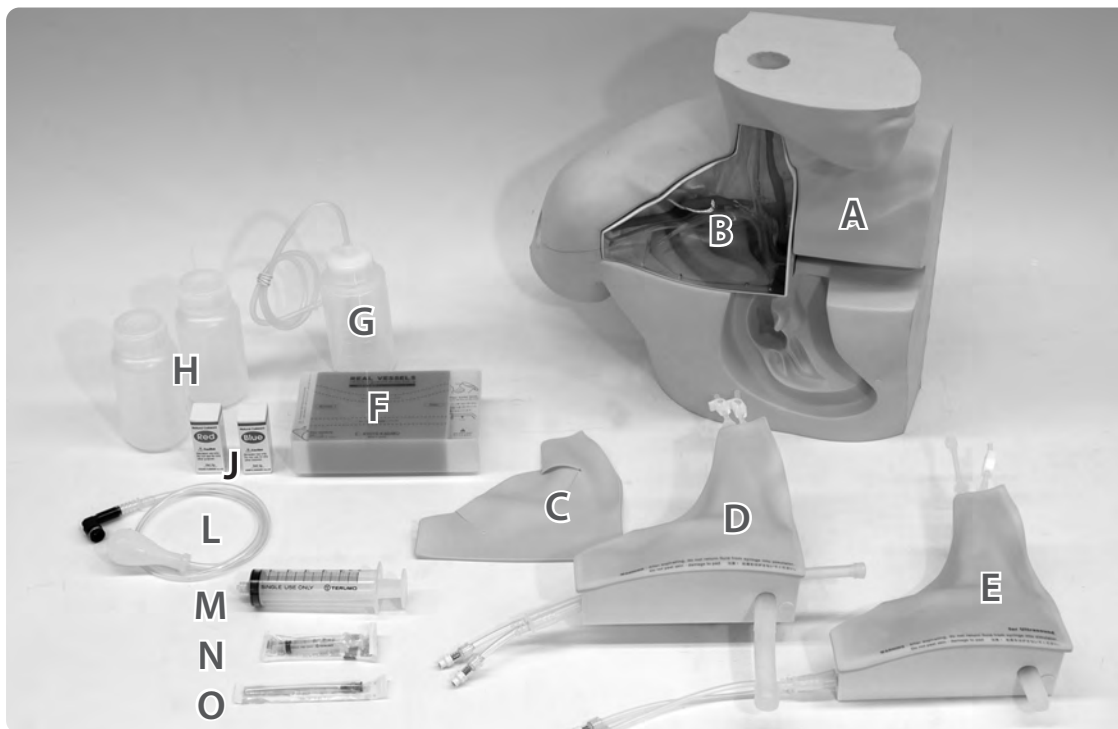
■ Transparent cannulation block

Facilitates three-dimensional anatomical understanding.

As an effective training tool for developing guide wire insertion skills.

Set includes

Before your first use, ensure that you have all components listed below.



- | | | | |
|---|---|--------------------------------|--------|
| A. male upper torso manikin | 1 | H. plastic jar | 2 |
| B. transparent anatomical block | 1 | J. coloring power (red / blue) | each 1 |
| C. skin for cannulation training | 1 | L. air bulb | 1 |
| D. landmark puncture pad | 1 | M. 50ml syringe | 1 |
| E. ultrasound puncture pad | 1 | N. sample syringe | 1 |
| F. introductory ultrasound training block
"REAL VESSELS" | 1 | O. sample needle | 1 |
| G. irrigation bottle | 1 | | |

DOs and DON'Ts

DOs

Use new needles for training.
Recommended needle size: 23G or thinner

Durable transparent cannulation pad is highly recommended for insertion training in order to maintain the puncture pad longer, although it is possible to demonstrate the full procedure with puncture pad.

Handle with care.
The materials for the models are a special composition of soft resin. Handle them with the utmost care at all times.

Clean the surface of the pad with dry or wet soft cloth and put talcum powder before storage. Clean the upper torso manikin by dry cloth.

Store the training set at room temperature, away from heat, moisture and direct sunlight.

DON'Ts

Never use the supplied needle for anything other than the simulator.

Do not peel the skin from the landmark pad.

Do not push the tube tip at the bottom of the landmark puncture pad.

Never wipe the simulator with thinner or other organic solvent.

Don't mark on the simulator and models with pen or leave any printed materials in contact with their surface. Ink marks on the models will not be removable.

Do not store the simulator and pads with any water left inside.

Do not use broken or bent needles for training.



Caution

When you use the puncture pads; after aspirating do not return the fluid from syringe into simulator. It may damage the vessel tube and may lead to leakage.

Landmark puncture pad



Parts names and functions P.5

Preparation

1. Attach the air bulb P.6
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3. Preparation of red fluid P.7
4. Fill the artery tube with red fluid P. 7- P.8
5. Preparation of blue fluid P.9
6. Fill the vein tube with blue fluid P.9 - P.10

After a session

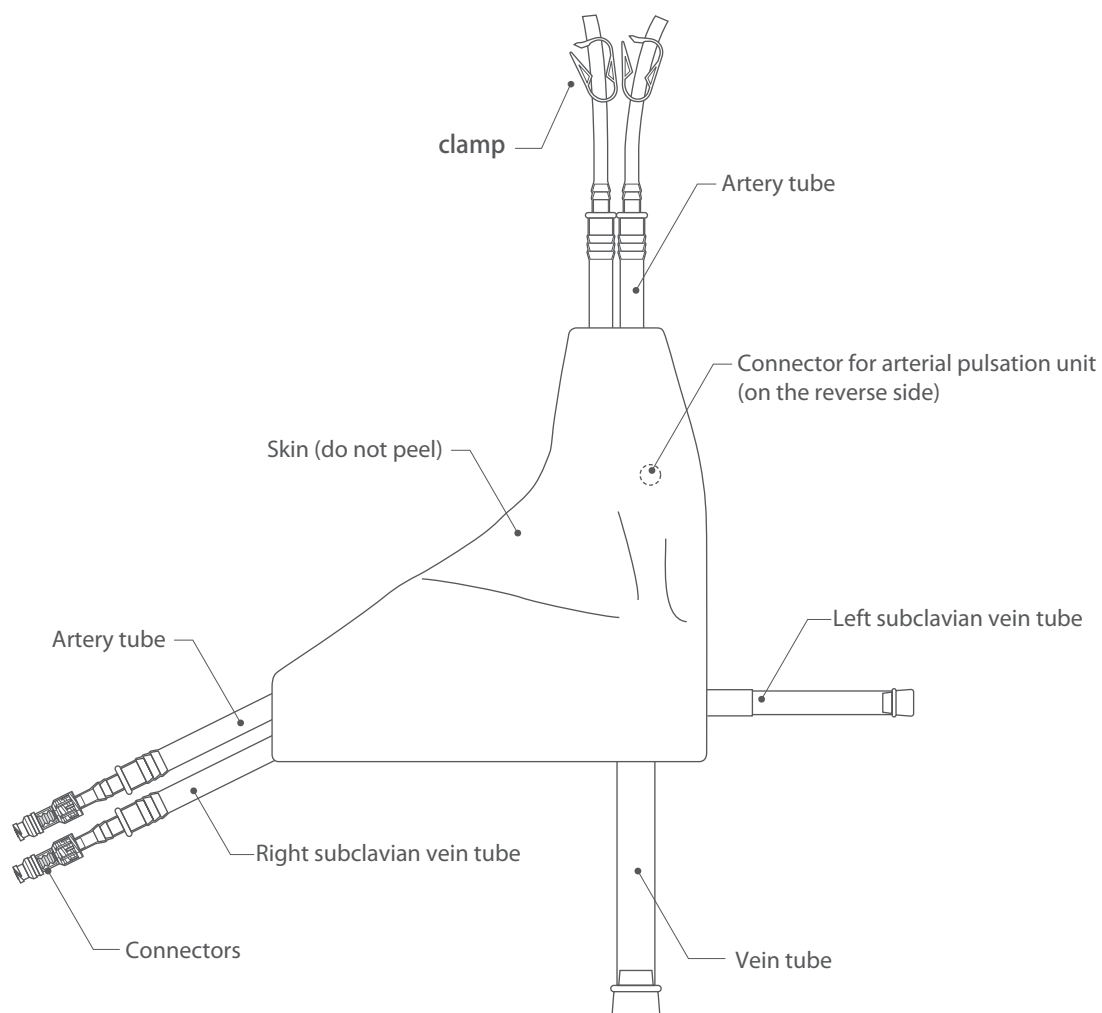
1. Discharge fluid from the pad
from the artery tube with red fluid P.11
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Find the how-to-use video on our website

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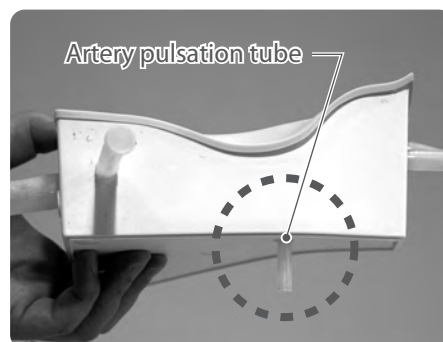
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Landmark puncture pad



Caution

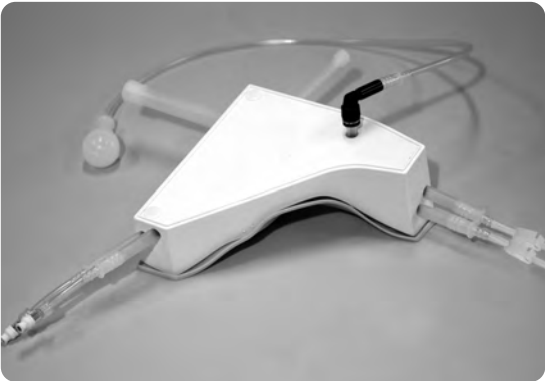
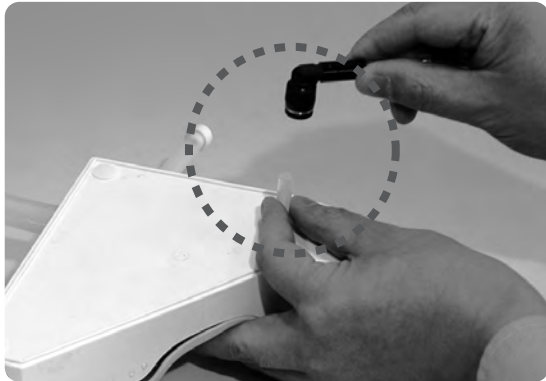
Do not put the pad on flat surface or push the connector for arterial pulsation unit, as this may damage the pad. Do not try to peel the skin of the pad especially after once it has received a puncture. This may lead to earlier wearing out of the pad.



Preparation

Attach the air bulb Place the pad into the torso

1 Attach the air bulb

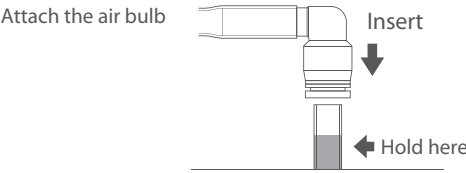


Carotid artery pulsation can be made by grabbing the bulb.

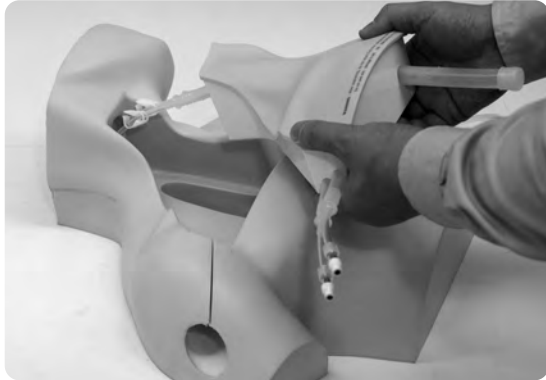
Attach the pulsation unit to the connector tube at the rear wall of the landmark pad. Ensure to hold the connector tube by your finger tips so that the tube is not pushed toward the pad wall.



.....
Do not put the pad on flat surface or push the connector for arterial pulsation unit, as this may damage the pad.



2 Set the pad on the torso



Putting the pulsation unit through the opening in the right shoulder of the torso, place the pad in the cavity.

Put the tubes through the hole of the head side. Open the cut on the left shoulder and put the tubes into the cut.



.....
Make sure that the tubes are not folded or tucked between walls of the pad and the body torso. The simulator doesn't work properly when the tubes are folded.

Preparation

Preparation of red fluid Fill the artery tube with red fluid

3 Preparation of red fluid



1. Scoop red blood powder to the tip of the small spoon provided in the set.
2. Dissolve 4 mini-spoonful of powder into half a jar of water. (approx. 200cc)

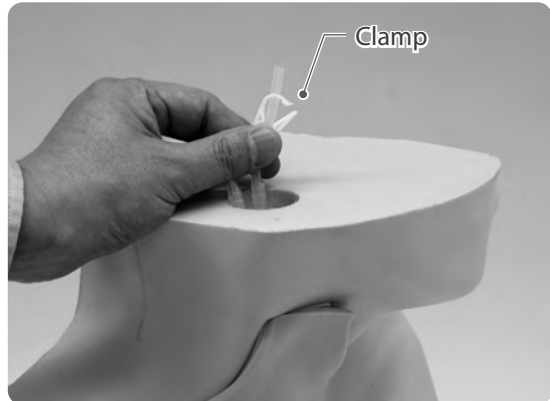


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The solution is not designed for prolonged storage. Please prepare new simulated blood for each session.

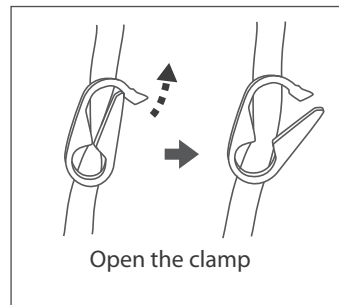
4 Fill the artery tube with red fluid



1. Put the torso upright.

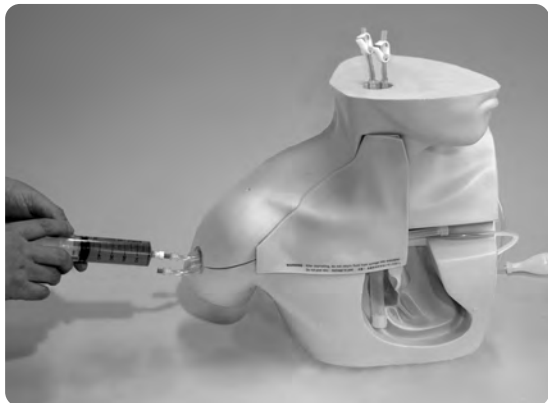


2. Open the Clamp.

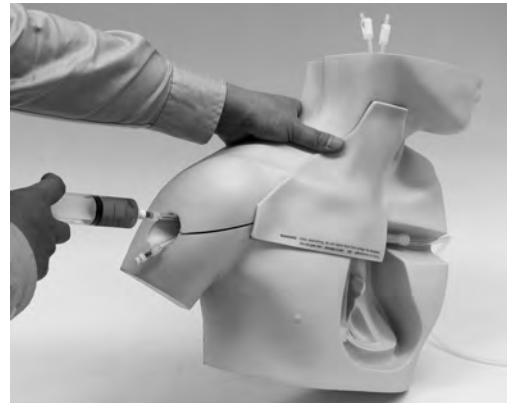


.....
Before start filling the fluid. Ensure that the clamp is open. Otherwise excessive pressure may cause damage to the pad.

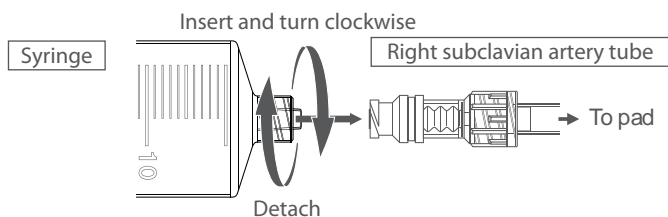
4 Fill the artery tube with red fluid



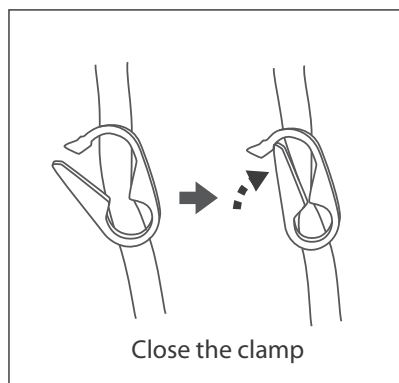
3. Fill the 50ml syringe with red fluid and connect the syringe tip to the connector at the lower end of artery tube (upper-back tube from the right shoulder).



4. Then push the piston slowly until the red fluid reaches to the height of the clamp.



5. Close the clamp.



3 Preparation of blue fluid



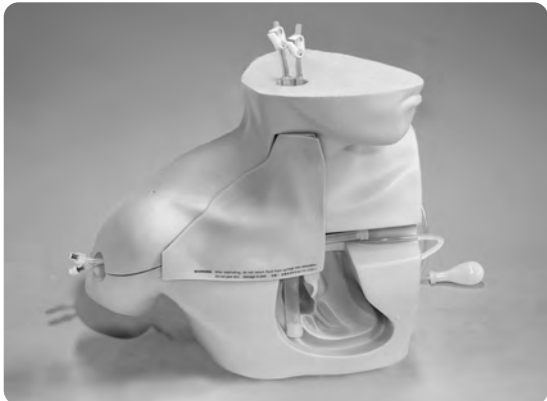
Scoop blue blood powder to the tip of the small spoon provided in the set.

Dissolve 4 mini-spoonful of powder into half a jar of water. (approx. 200cc)

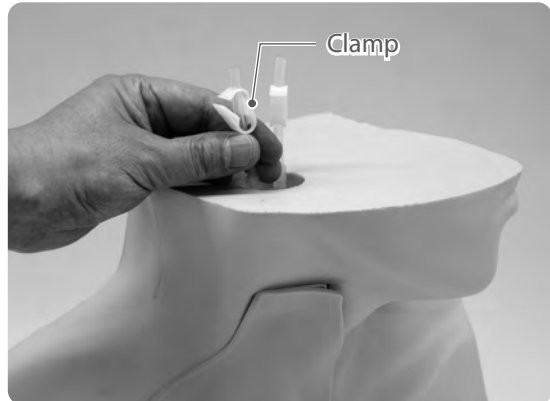


.....
The solution is not designed for prolonged storage. Please prepare new simulated blood for each session.

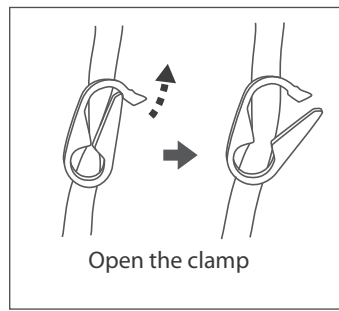
4 Fill the vein tube with blue fluid



Put the torso upright.

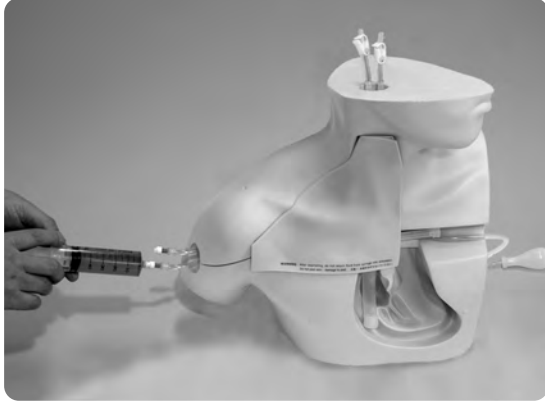


Open the clamp.



.....
Before start filling the fluid. Ensure that the clamp is open, otherwise excessive pressure may cause damage to the pad.

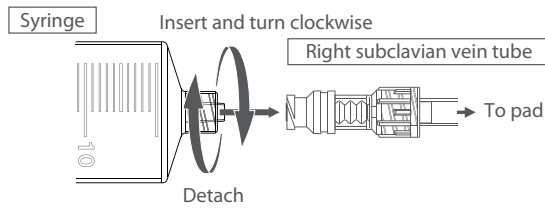
4 Fill the vein tube with blue fluid



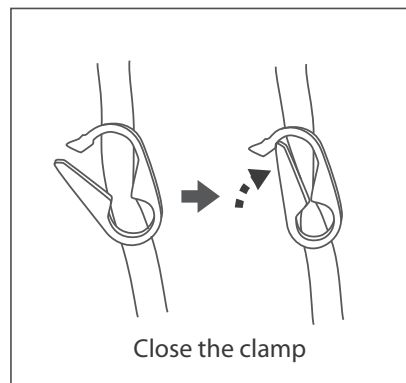
3. Fill the 50ml syringe with blue fluid and connect the syringe tip to the connector at the lower end of vein tube (lower-front tube from the right shoulder).



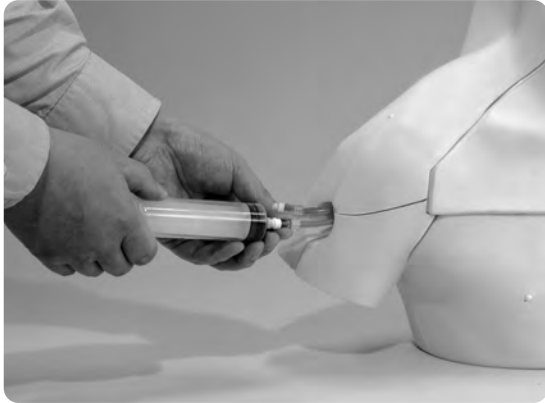
4. Then push the piston slowly until the blue fluid reaches to the height of the clamp. Ensure that all tubes are fully filled with the fluid and no air bubbles remain inside. By tilting the torso carefully, air can be removed.



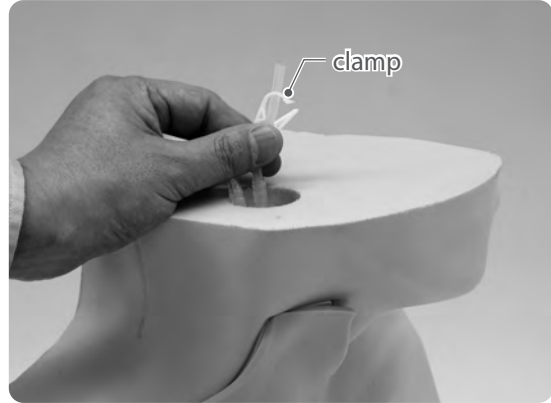
5. Close the clamp.



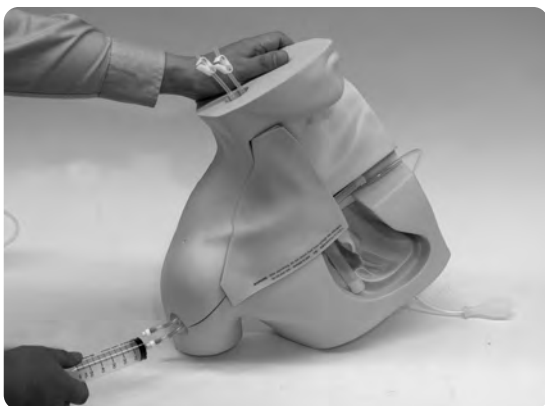
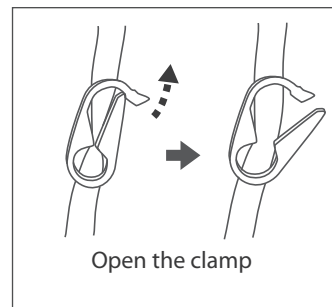
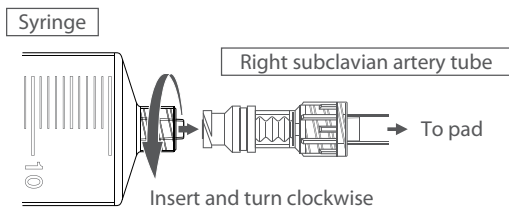
5 Discharge fluid from the pad from the artery tube with red fluid



1. Place the torso upright.
Connect the empty 50ml syringe to the connector at the lower end of the artery tube.



2. Open the Clamp of the artery tube.

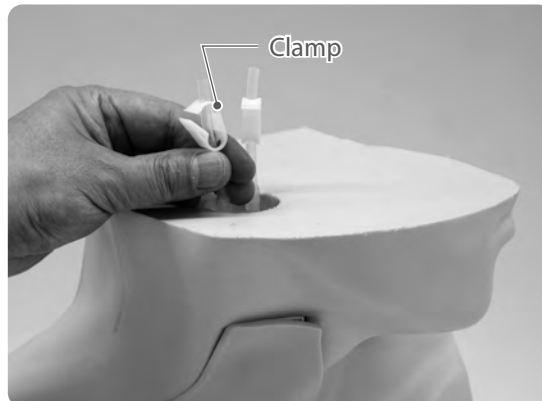


3. Pull the syringe slowly and drain the fluid.
To clean the tube, fill the tube with uncolored water and discharge it again.

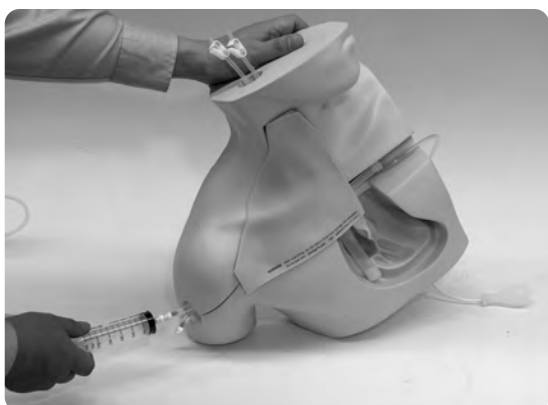
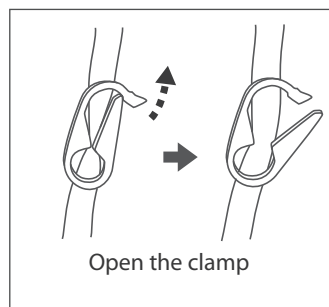
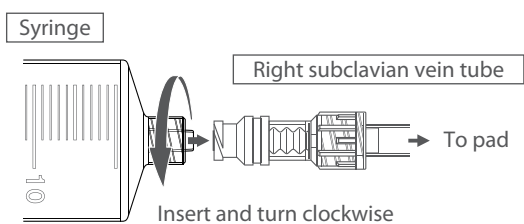
5 Discharge fluid from the pad from the vein tube with blue fluid



1. Connect the empty 50ml syringe to the connector at the lower end of the vein tube.



2. Open the clamp of the vein tube.

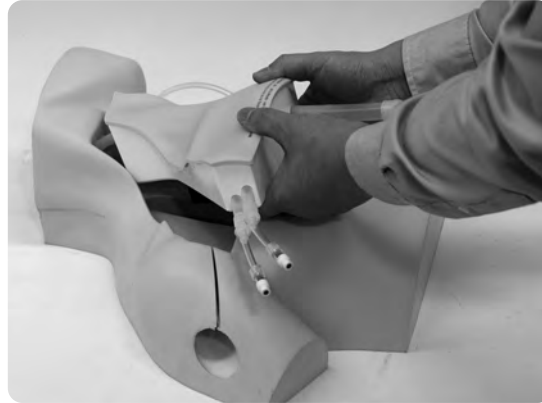


3. Pull the syringe slowly and drain the fluid.
To clean the tube, fill the tube with uncolored water and discharge it again.

6 Detach the puncture pad from the simulator



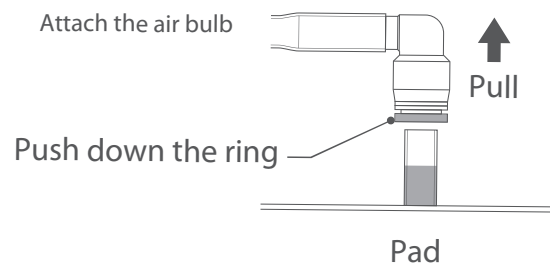
Open the cut of left shoulder and remove the tubes. Pull out the puncture pad from inferior side.



Remove the puncture pad from the torso.



Disconnect the pulsation unit from the pad. The tube can be disconnected by pushing the stopper ring toward the connector.



Be careful NOT to push the connector tube tip toward the puncture pad. The pressure may cause damage to the soft structure of the puncture pad.

Ultrasound puncture pads



Introductory ultrasound training block "REAL VESSELS"

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Ultrasound puncture pad

- Parts names and functions P.16

Preparation

- 1. Place the pad into the torso P.17
- 2. Fill the artery tube with water P.17-P.18
- 3. Fill the vein tube with water P.18-P.19

After a session

- 1. Discharge water from the artery tube P.20
- 2. Discharge water from the vein tube P.21
- 3. Detach the puncture pad from
the simulator P.22
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Find the how-to-use video on our website

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Introductory ultrasound training block "REAL VESSELS"

1 General information

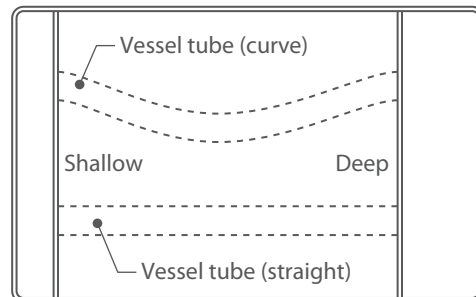
This block facilitates training in basics of ultrasound guided punctures, before moving onto trainings with the anatomical type ultrasound pad.

Features

- 2 simulated vessel lines: straight and curving.
- Both lines are embedded with slope to represent from shallow vessel to deep one.
- Vessel wall yields under pressure of a needle tip.

Training items

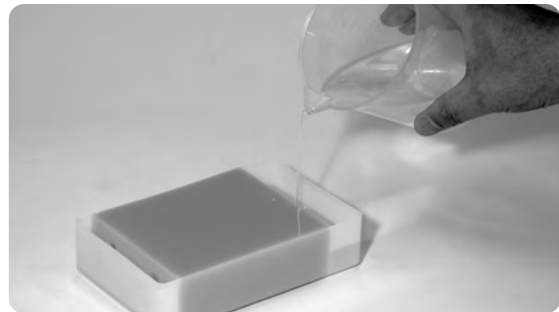
- How to get correct ultrasound images.
- Probe manipulation.
- Basics for ultrasound-guided vessel access.



2 Preparation

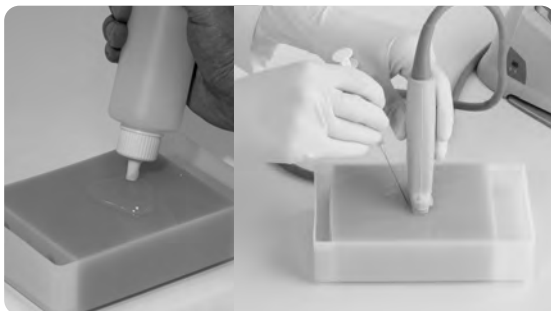


Peel the protective sheet carefully.

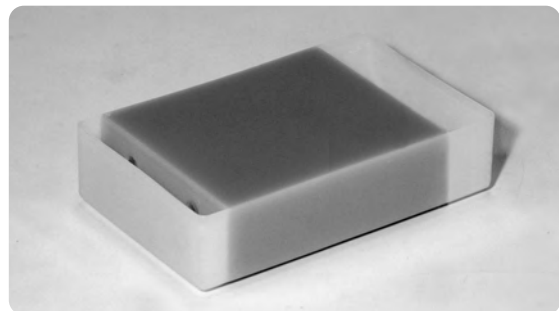


Pour water into the wider slit in the container and fill it up to the line on the wall. Ensure that shallower end of vessels are fully under the water surface.

3 Training and after a session



Spread some ultrasound gel on the surface of the block and start training. When the needle tip is in the vessel, your syringe can collect water. Add water to the container slit as necessary.

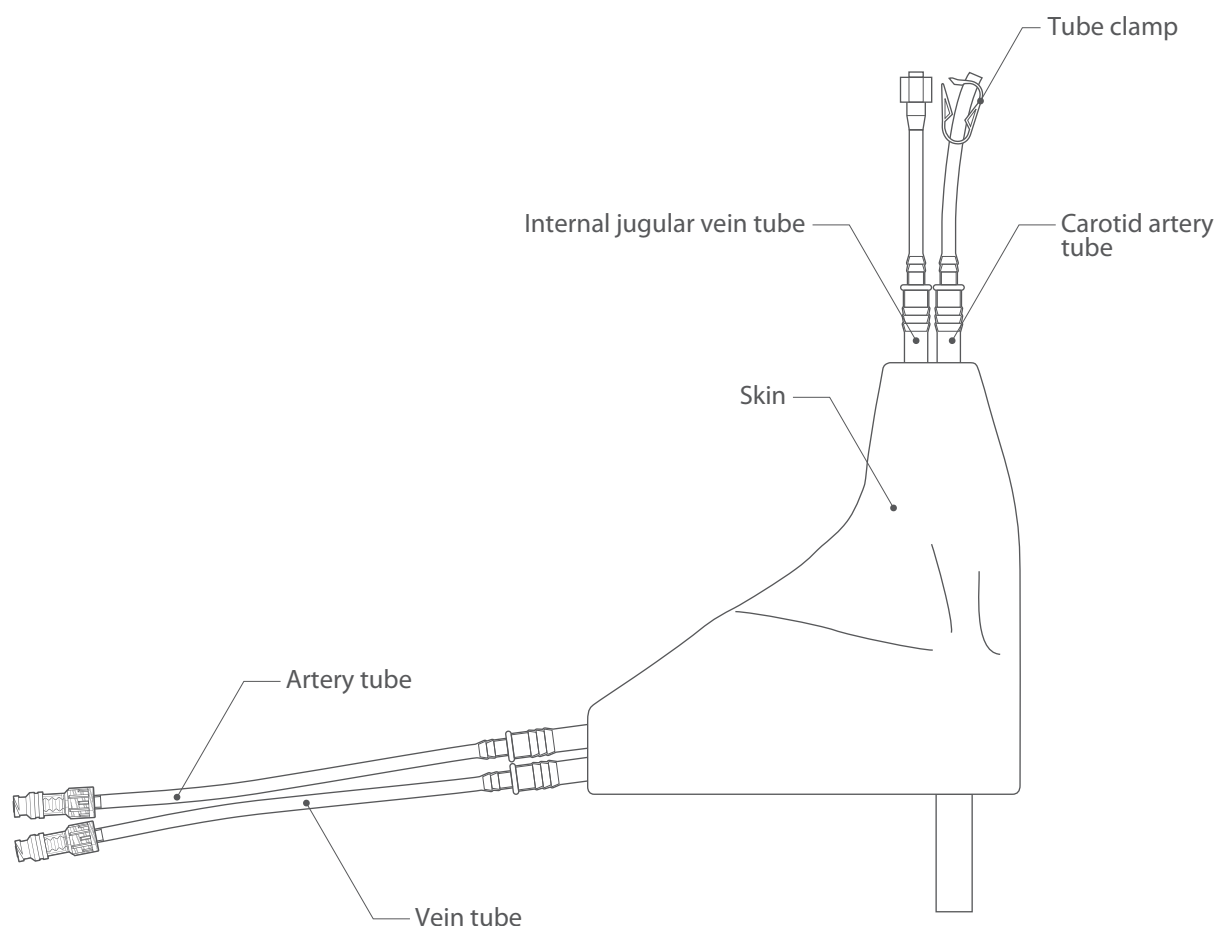


After use, wash off the gel completely with running water and dry well. Then, replace the protective sheet before storage.



Do not leave paper, cloth or other materials except for the included protective sheet contact with the block surface. Such items may stick to the surface and lead to damage the block.

Ultrasound puncture pads



Caution

.....
Vein tube embedded in the pad has a soft and thin wall to realize life-like ultrasound image.

Do not push the probe strongly.

Make sure that the tubes are not folded or tucked between walls of the pad and the body torso. If fluid or air is injected while the tube is folded or clogged, excessive pressure may cause a breakage or burst of the thin tube.

Fill the vessels with COLORLESS water.

After aspirating, do not return fluid from syringe into simulator.

Preparation

Place the pad into the torso Fill the artery tube with water

1 Place the pad into the torso



1. Put the tubes through the hole of the head side.



2. Open the cut of left shoulder and put through the tubes. Place the pad into the torso.

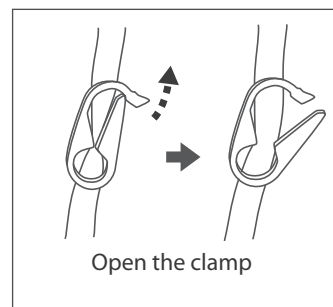


.....
Make sure that the tubes are not folded or tucked between walls of the pad and the body torso.
The simulator doesn't work properly when the tubes are folded.

2 First, fill the artery tube with water



1. Open the tube clamp at the head end of the artery tube.

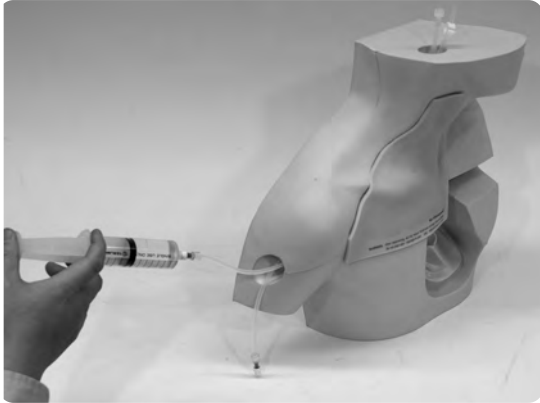


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Put the torso upright.
This is to avoid bubbles being caught in the tube, as well as to prevent the water flows out from its open end.

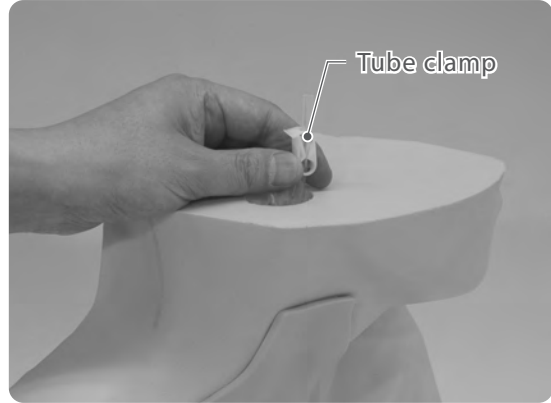
Preparation

Fill the artery tube with water
Fill the vein tube with water

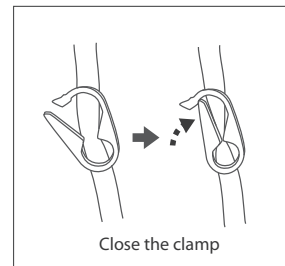
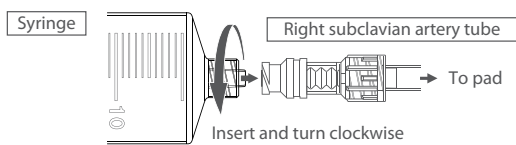
2 First, fill the artery tube with water



2. Connect the water-filled 50ml syringe to the connector at the lower end of the artery tube (upper and rear side tube at the shoulder). Screw in the tip of the syringe to the connector. Advance the piston slowly until the water surface reaches height of the tube clamp.



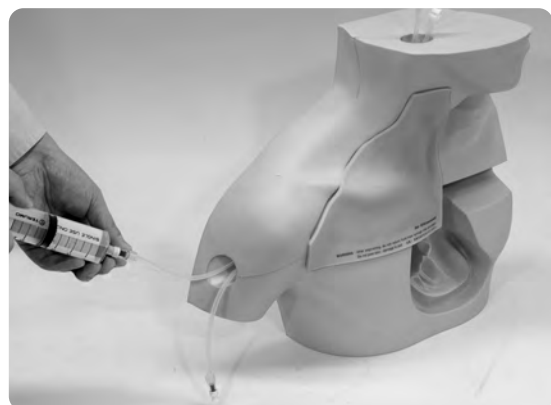
3. When the tube has been filled by water, close the tube clamp. Take off the syringe from the tube.



3 Then, Fill the vein tube with water

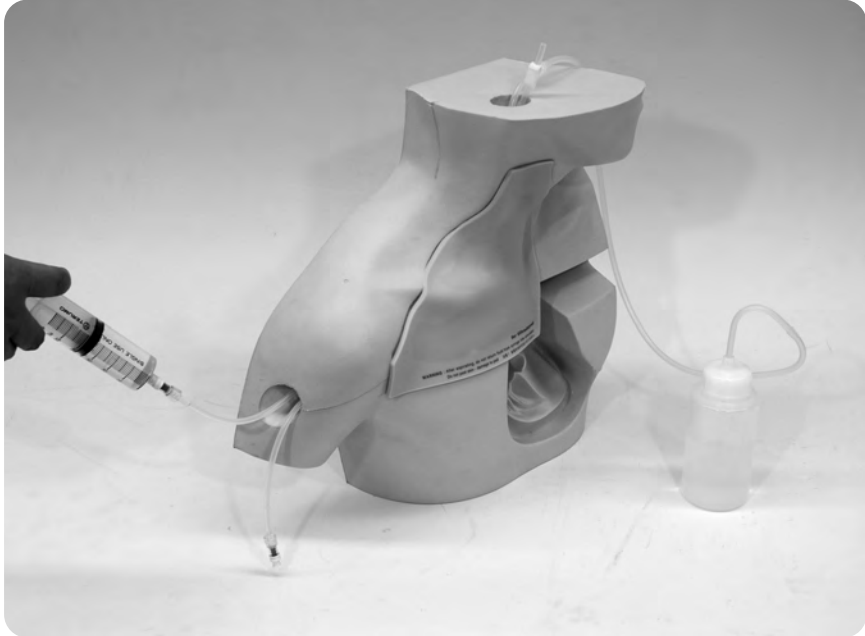


1. Put some water (around 5cm height) in the irrigation bottle. Connect the tip of the tube from the bottle to the head end of the vein tube.

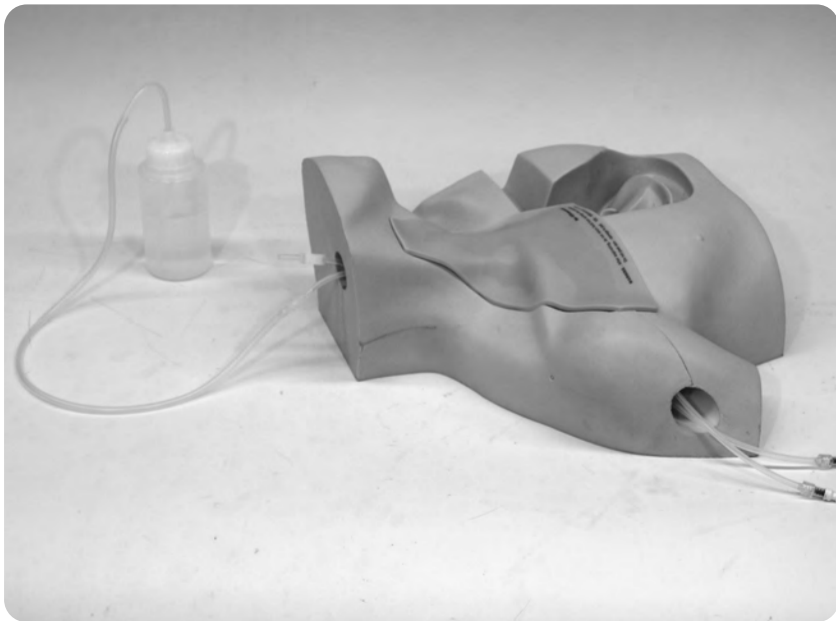


2. Connect the syringe filled with water to the connector at the lower end of the vein tube. Screw in the tip of the syringe clockwise to the connector until it locks.

3 Then, Fill the vein tube with water



3. Push the piston of the syringe slowly until the water flows out into the bottle. Take off the syringe from the tube. Keep the bottle connected while the simulator

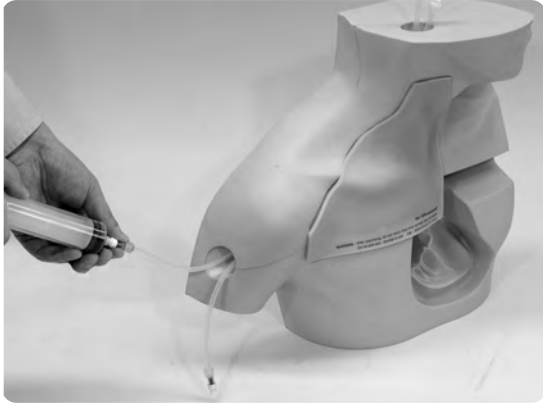


4. Lay the simulator and start your training session.

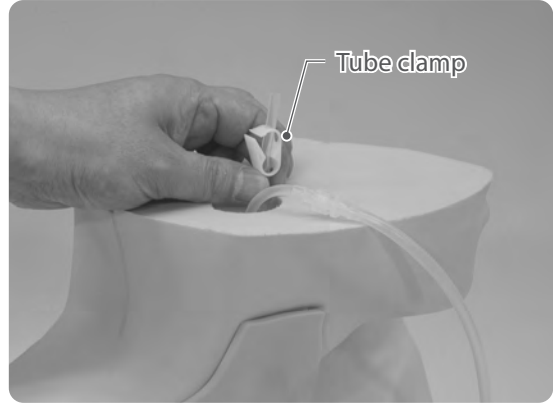


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When the vessel tube is empty, ultrasound image will not be shown properly.

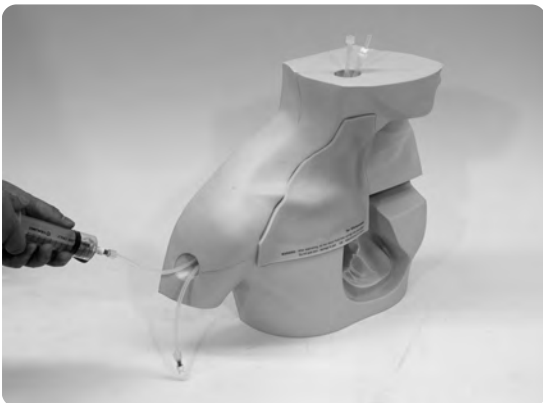
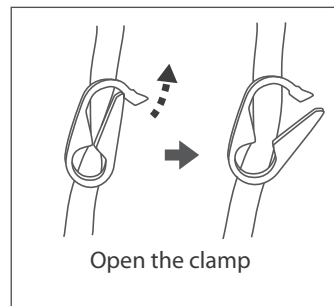
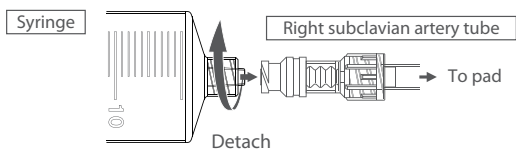
1 Discharge water from the artery tube



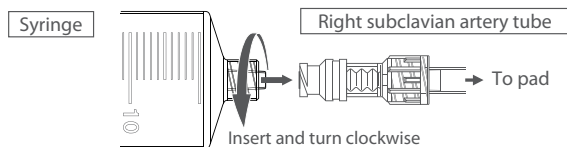
1. Put the torso upright and connect the empty 50ml syringe to the lower end of the artery tube.



2. Open the tube clamp.



3. Drain water by pulling the piston of the syringe. Detach the syringe from the tube and discharge the collected water.

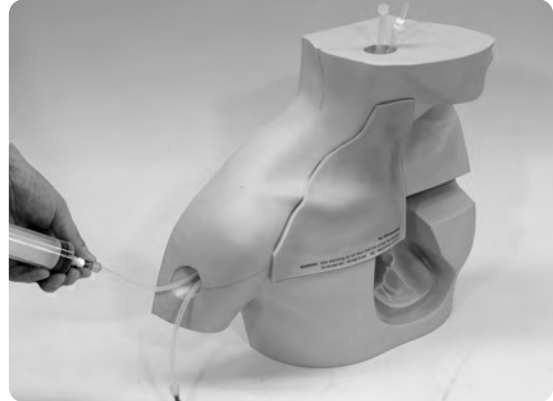


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**Ensure that all the water is discharged from the pad after use.
Do not store the pad while any water remains inside as it may lead to malfunction or damage the pad.**

2 Discharge water from the vein tube



Put the torso upright and disconnect the tip of the tube from the irrigation bottle. Connect the empty 50ml syringe to the lower end of the vein tube. Drain water by pulling with the syringe.

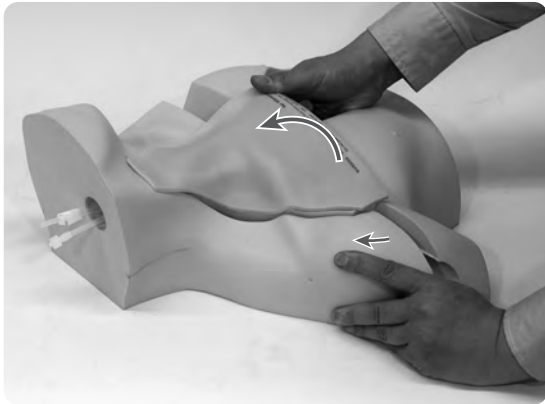


Detach the syringe and discharge the water.

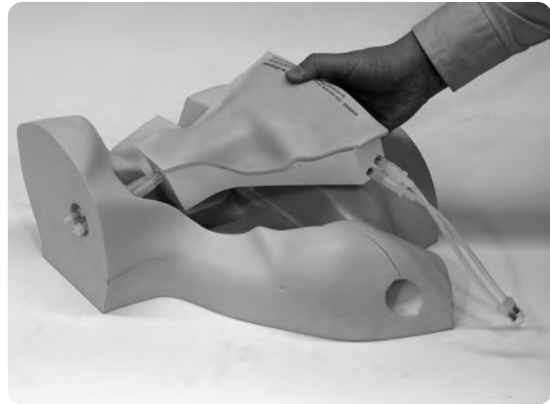


.....
**Ensure that all the water is discharged from the pad after use.
Do not store the pad while any water remains inside as it may lead to malfunction or damage the pad.**

3 Detach the puncture pad from the simulator



1. Open the cut of left shoulder and remove the tubes. Pull out the puncture pad from inferior side.

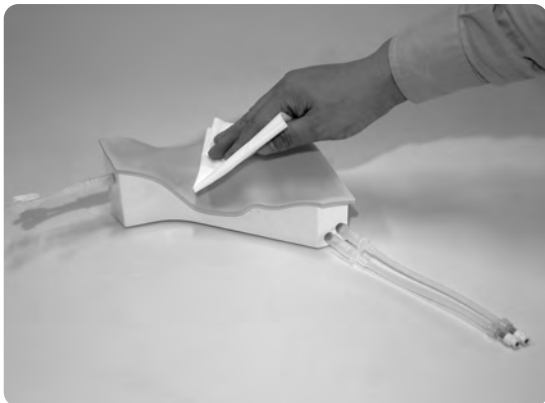


2. Remove the puncture pad from the torso.



.....
Do not lift the pad by pulling the vessel tubes as this may cause breakage in the embedded tube walls.

4 Maintenance of the skin of the pad



1. To remove the ultrasound gel on the skin, wipe the skin surface gently by soft cloth, or soft wet close. If stickiness persist, wipe with soft cloth with small amount of alcohol for disinfection.



2. The skin of the ultrasound pad is not fixed and may come off if you hold the pad by skin only. In such case, replace the skin not to leave air bubbles under it. Air bubble or layer between skin and soft tissue will impair the quality of scanning image.



.....
Never use thinner or organic solvent for cleaning. It may cause breakage in the simulator skin. Do not touch the surface of the skinless pad, or expose the surface to air for a long time. Dust attached to the surface may weaken its adhesion and lead to deterioration in scanning images.

Transparent cannulation block



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Preparation	
Remove the pad currently set on the torso	P.25
Set up the cannulation block	P.26
Detach the pad from the torso	P.27

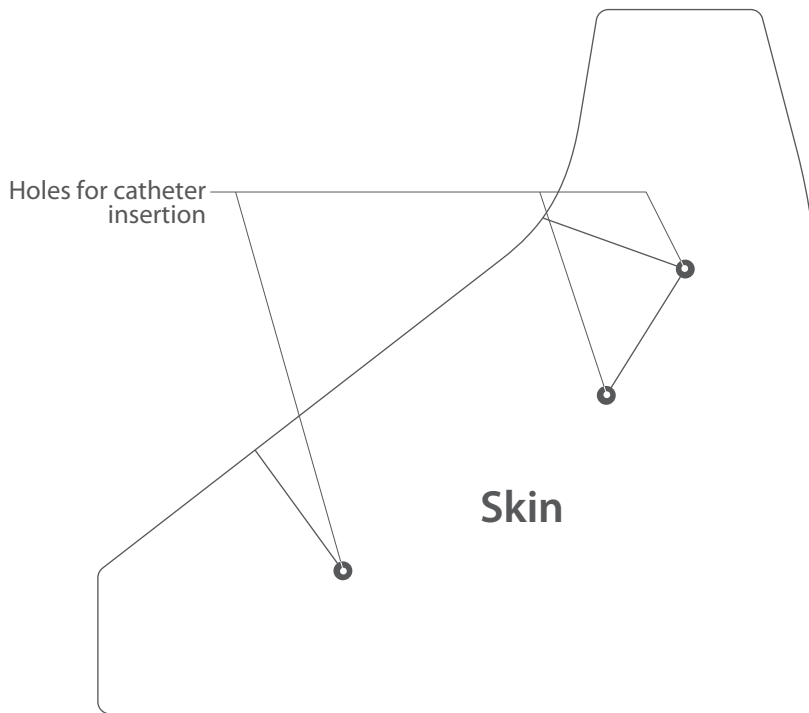
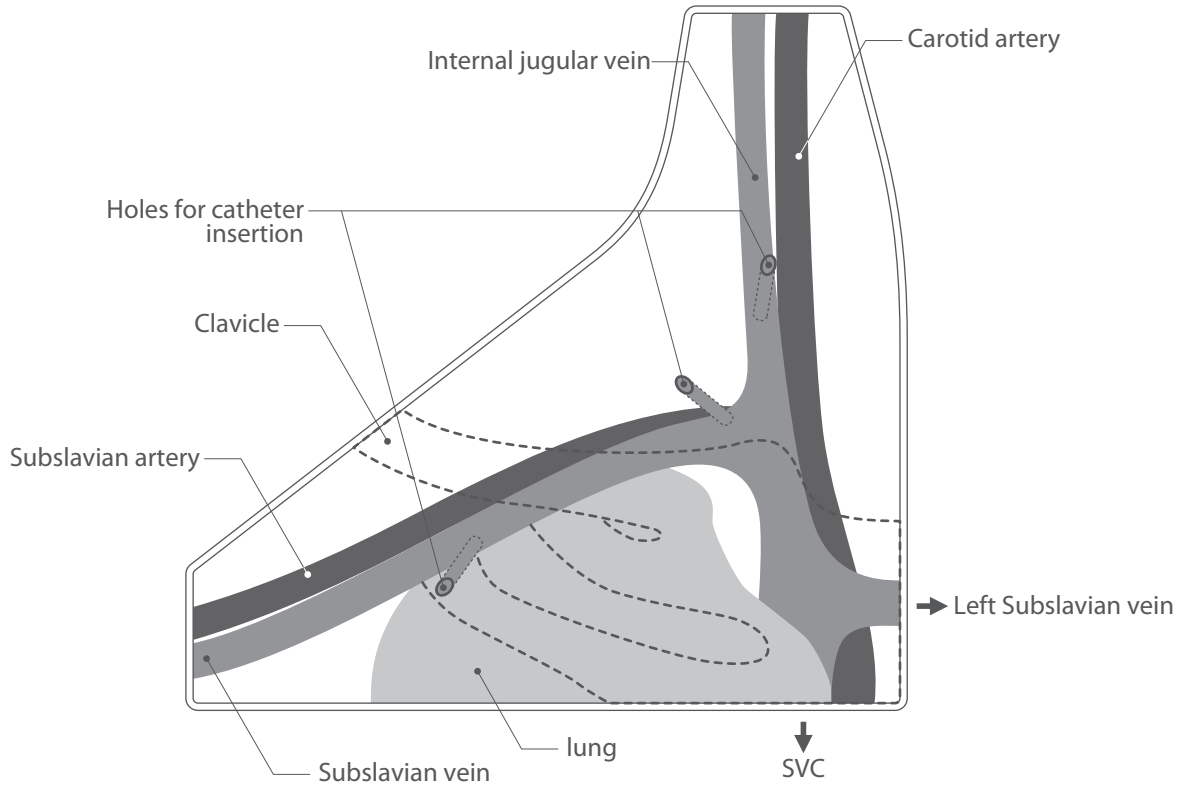
Find the how-to-use video on our website

<http://www.kyotokagaku.com>

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Parts names and functions

Transparent cannulation block



General information

The transparent cannulation block is an effective educational model to facilitate understanding of the relevant anatomical structures and is applicable to trainings in cannulation by interchanging with the puncture pads.

Training items

- Anatomical understanding
- Learn the appropriate depth and angle of the needle for each approach.
- Handling and manipulation of the catheter (guide wire).
- Simulate the steps of the procedures.



Caution

- Do not make any puncture at any site besides the prepared openings.
- The transparent block is not designed to be filled with fluid.
- Do not pour any fluid or water to the openings on the cannulation block.
- Please handle the skin sheet with utmost care. Excessive strain may cause breakage.

1 Remove the pad currently set on the torso

If other puncture pad is already set on the torso, take it out following the instruction on:

Remove the landmark puncture pad



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Remove the ultrasound puncture pad

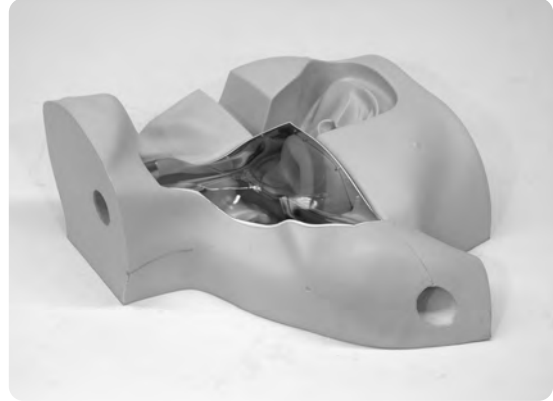


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2 Set up the cannulation block

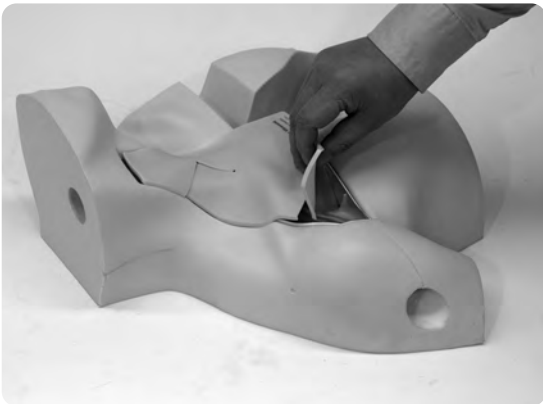


Place the transparent cannulation block to the cavity.



Now you can practice cannulation by observing the catheter through the transparent block.

Cover the pad with the skin sheet



Cover the cannulation block with the skin sheet. Put the skin sheet over the pad so that the slits of the skin sheet fit with the openings on the pad.



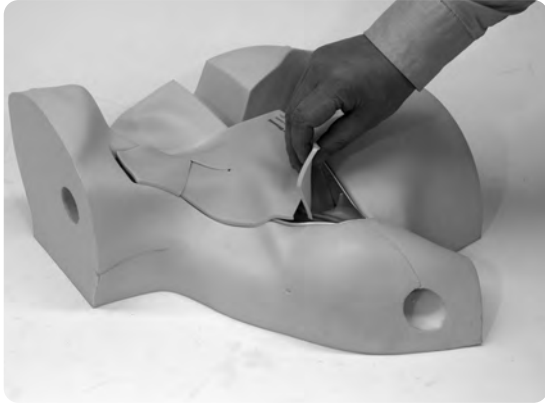
Now, the simulator is ready for cannulation training. The slits in the skin sheet allow trainees to remove it with the catheter inserted in the pad.



Caution

.....
Do not make any puncture at any site besides the prepared openings.
The transparent block is not designed to be filled with fluid.
Do not pour any fluid or water to the openings on the cannulation block.
Please handle the skin sheet with utmost care. Excessive strain may cause breakage.

3 Detach the pad from the torso



Remove all needles and catheters from the simulator.
Remove the skin.



Remove the pad holding its frame.

* If you are moving onto next training session using other kind of training pad, set up the new pad following the instruction on :

Set up the landmark puncture pad



P.6

Set up the ultrasound puncture pad



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Trouble shooting

Quick check-up before calling the customer service. Use the table if you have problems using the simulator. Look in this section for a description of the problem to find a possible solution. (TEL +81-75-605-2510)



Trouble	Possible Reason	What to Do
I cannot fill/discharge the fluid to/from the vessel tubes properly.	The body torso with the pad is laid down.	Put the torso upright.
	One or some vessel tubes from the pad are folded.	Straighten the tubes.
	The puncture pad is worn out.	Order new pads for replacement.
Heavy leakage from puncture area.	The puncture pad is worn out.	Order new pads for replacement.
	Pool of fluid is formed in the pad.	Straighten the tubes. Withdraw all fluid from the tubes and squeeze the remaining fluid from the soft tissue. Dry the pad naturally.



Carotid pulsation does not work.	The pulsation unit (air bulb and tube) is not connected to the pad.	Connect the pulsation unit to the connector at the bottom of the landmark pad.
	The tube of the pulsation unit is folded in the pit.	Make the tube straight.



Ultrasound image is unclear.	The vessel tubes are not filled by water/fluid. Or, air bubbles are formed in the vessels.	Fully fill the vessels with water.
	Air layer is formed under the skin sheet.	Reattach the skin sheet removing air bubbled and layers.
	The puncture pad is worn out. Order new pads for replacement.	Order new pads for replacement.



Caution

Ink from this manual can stain the model - do not let it touch the model and its components.

For inquiries and service, please contact your distributor or KYOTO KAGAKU CO., LTD.

Consumables and replacement parts

Part number	Description
11347-119	Landmark puncture pad (a set of 2)
11347-170	Ultrasound puncture pad II (a set of 2)
11347-190	Transparent cannulation block
11347-210	Introductory ultrasound training block (a set of 2)

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Please contact manufacturer with any discrepancies, typos, or mistakes in this manual or product feedback. Your cooperation is greatly appreciated.