

MW82



Caution

Do not mark on the model and other components with pen or leave any printed materials contacted on surface. Ink marks on the model cannot be removed.

Femoral Arterial Puncture Trainer

Instruction manual

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Introduction

Manufacturer's Note

Features

MW 82 is a skills trainer for femoral arterial access training both with ultrasound-guided and landmark-guided procedures, featuring:

- Realistic arterial pulse
- Palpable ASIS and pubic bone landmarks
- Physiological counterflow
- No visible puncture marks at the injection site
- Leak-proof connections

The product is designed for training of healthcare professionals. Usage for any other purpose or the way of use not described in this manual is strongly discouraged.

Training Skills

- Ultrasound-guided femoral artery puncture
- Landmark-guided femoral artery puncture
- Blood sampling

DOs and DON'Ts

- **Handle the manikin and the components with care**

Be sure not to drop or add shock to the manikin and its components, since the product uses special resins and heavy, such shock may cause damage to the products or environment.

- **As simulated blood, use either water or the simulated blood included in the set**

Damage or malfunctions caused by using other liquids may not be covered under the product warranty.

- **Be sure to drain the liquid from the system after use.**

When the product left for prolonged period of time, liquid may leak from the puncturing sites.

- **Cleaning and Drying**

After use, clean and dry thoroughly. Residual moisture may cause mold. Completely drain all liquid and allow to air dry. Clean the surface with a damp cloth using mild soap or diluted detergent if needed.

- **Do not let ink from pens, oriented materials, this manual or other sources contact with the product's surface, as they cannot be cleaned off**

- **Never use the organic solvent such as paint thinner to clean the skin, as this will damage the simulator**

- **The color of the product's surface may change across the ages, this does not affect the quality of its performance**

Storage dark, cool and dry space will help prevent the product's colors from fading and product from deforming.

- **Used needles of recommended size**

Using needles larger than 22G may shorten the lives of skins and tubes.

Precautions

DOs and DON'Ts

DOs

- **Operate the system under the designated circumstances**

Power input: AC100V~240V plus or minus 10%, 50Hz/60Hz
Temperature range: between 0 degrees C and 40 degrees C (no congelation)

Relative humidity; between 0%to 80% (no condensation)

*Connecting to power source outside of the designated range may lead to fire.

- **Safe disposition**

To avoid short circuit, do not run the simulator set above a power receptacle.

- **Handle the power plug and cord observing following precautions**

1. Clean the head of the plug periodically.
2. Plug in the plug to the outlet firmly to the end.
3. Always hold the plug when unplugging. Do not pull the cable.
4. Do not force to bend, twist the cable and avoid scratching or cutting on it.
5. Unplug the power cord when the simulator is not in use.
6. Remove any dust that has accumulated on the power plug and insert the plug completely into the power socket. Failing to follow the above precautions can result in damage in the plug and the cable, constituting risk of fire or shock.

- **When the electric parts get warm or produce smoke, immediately turn off the power and unplug from the power source**

Risk of fire. Contact your distributor or the manufacturer for repair.

- **Handle with care**

The materials for the models are special compositions of soft resin. Please handle them with utmost care at all times.

Clean the manikin with water or mild detergent and coat with baby powder. Be careful not to apply water or detergent on the internal machinery.

Transport the simulator with caution. Hold the simulator by the handles when transporting. Do not hold the simulator by the torso manikin.

- **Storage**

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

Storage under the temperature above 50 degrees C may reduce the performance quality of the simulator

- **Use the simulator in quiet environment**

- **Follow the instructed shutting down procedures** Shut down the computer first. Do not turn off the power or unplug the power cord without shutting down the program. Misuse may lead to damages.

DON'Ts

- **Do not disassemble or open electric or precision components**

Do not remove or alter cable connections in the inner machinery. Connection cables and their settings have been preset; changes to the set up may lead to malfunctions or damages to the simulator.

Also, do not open up or disassemble the housing for electric parts or precision components.

Refrain from opening up any lids, caps or covers for such area, and never run the system while any of such covers are open.

*Never disassemble the electric components, power plug and cable as it may create a risk of fire, shock or injury. Contact your distributor or the manufacturer for repair.

- **Never wipe the product and components with thinner or organic solvent**

- **Ink marks on the soft surface won't be removable** Don't mark on the product and components with pen or leave any printed materials in contact with their surface.

- **Do not give shocks** The electric components are precision instruments. Strong shocks or continuous vibration may cause breakages of its internal structure.

- **Do not run the system continuously over 2 hours**

Take at least 30 minutes shutdown, turning off the power, every 2 hours.

- **Do not wet the electric components**

Do not pour or spill water or liquid detergent over the electric components, power cable and power plug.

Running the system while the electric components are wet may create a shock hazard or a risk of fire.

- **Do not handle the power plug with wet hands**

Risk of shock.

- **No fire** Do not put the product close to fire. It may lead to discoloration or deformation of the product as well as short circuit, creating a risk of fire.

- **Do not install other software onto the computer**

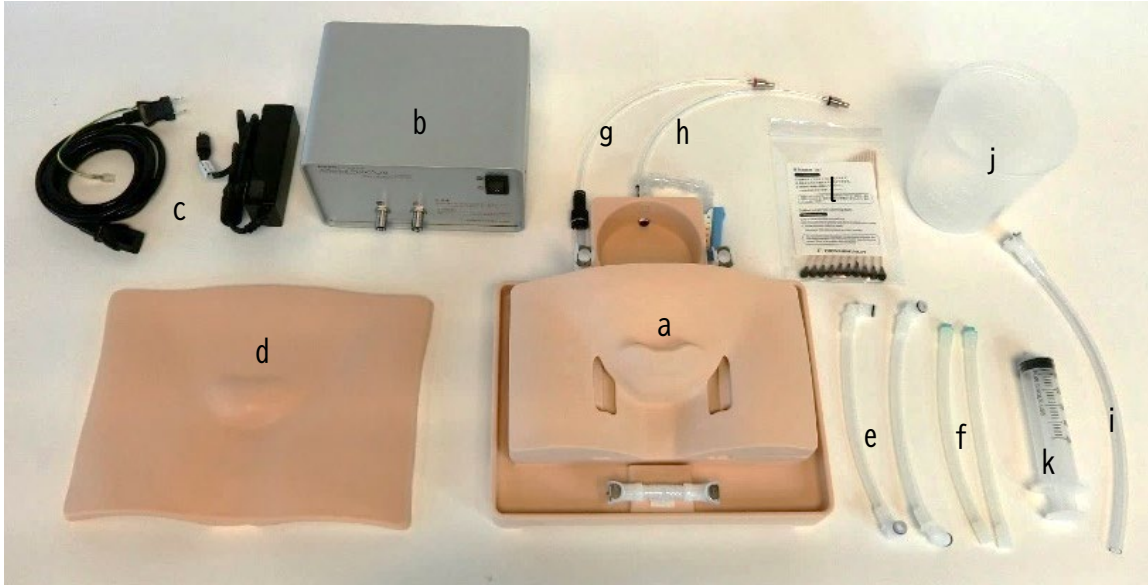
It may lead to system malfunctions.

Discoloration of the surface may occur after a long period of time. Discoloration does not affect the function and performance of the simulator.

Set includes

Set includes

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



a. Groin manikin	1
b. Circulation pump	1
c. Power cable	1
d. Skin sheet	1
e. Artery tube	2
f. Vein tube	2
g. Connection tube (black)	1
h. Connection tube (red)	1
i. Drain tube	1
j. Plastic beaker	1
k. Syringe	1
l. Cotton swab	10

*d, e, and f come pre-installed in the groin manikin.

Read before use

The product is intended for use of medical and paramedical professionals only. Any other use, or any use not in accordance with the enclosed instructions, is strongly discouraged. The manufacturer cannot be held responsible for any accident or damage resulting from such use. Please use this product carefully and refrain from subjecting to any unnecessary stress or wear. Should you have any questions on this simulator, please feel free to contact our distributor in your area or KYOTO KAGAKU at any time. (Our contact address is on the back cover of this manual)

Preparation

Prepare the simulated blood

Pour 1000mL of water into the plastic beaker. Put the simulated blood (swab type) into the beaker and stir the water sufficiently to prepare the simulated blood.

- Take care not to drop simulated blood on clothes as simulated blood stains can be very difficult to remove.
- The solution is not designed for prolonged storage. Prepare new simulated blood for each session.



Preparation

Connecting the tubes circulation pump

1. Connect the tubes to the circulation pump

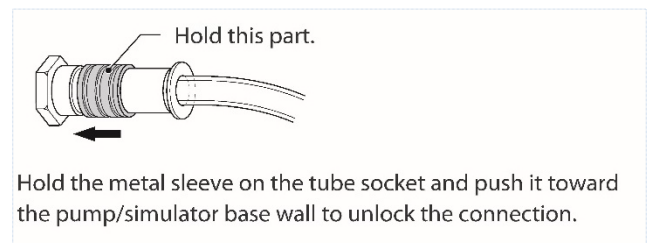
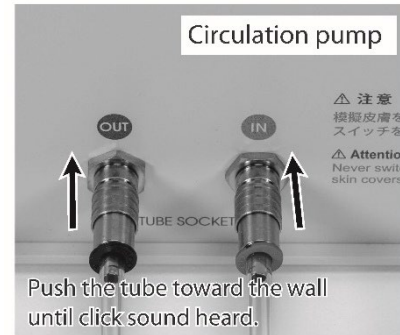
Insert the ends of the tube to the tube sockets on the circulation pump and simulator base so that the sockets marked with same color sign are properly connected.

Ensure to connect:

- red to red
- black to black

When disconnection the tubes:

Hold the metal sleeve on the tube socket and push it toward the pump/simulator base wall to unlock the connection.



Connect the circulation pump and AC Adapter.

Connecting the Circulation Pump and AC Adapter

1. Attach the AC Adapter

Hold the AC adapter plug with the arrow mark facing upward. Insert the plug into the jack until it clicks into place.

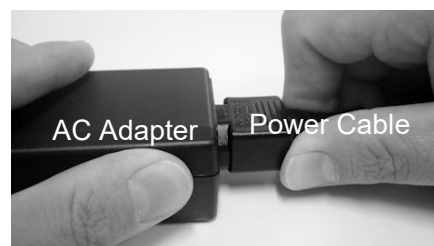


2. Connect the Power Cable

Firmly connect the supplied power cable to the AC adapter.

Disconnecting

To disconnect, pull back the adapter cover to release the lock, then remove the connector.



Preparation

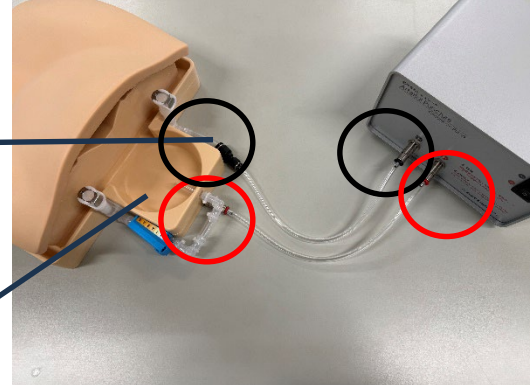
Setting up the groin manikin

1. Connecting the tubes from the pump

Connect the tube (black) from the **OUT** port to the tube tip located at the outer corner of the reservoir.



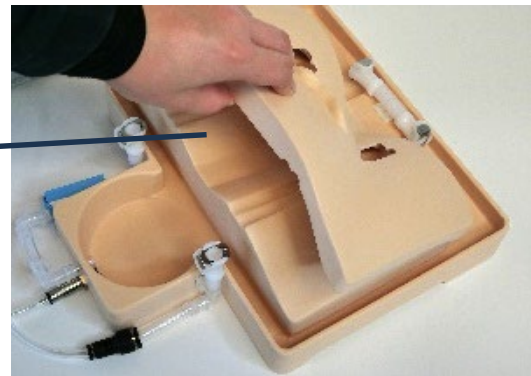
Connect the connection tube (red) from the **IN** port of the circulation pump to the reservoir connector



2. Remove the skin sheet and separate the tube holder

Remove the skin sheet

tube holder



Separate the upper part of the tube holder by disengaging the magnetic fasteners connecting the upper and lower sections.

Tip: Insert a finger into the gap between the upper and lower parts to help release the fasteners.

3. Connecting Artery Tubes

Place the two artery tubes along the bilateral outer gutters.

Connect each tube tip to the corresponding connector.

Insert the tube tip firmly into the connector until a click is heard.

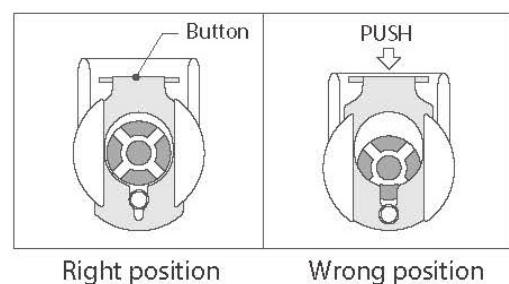


*Before connecting, ensure that the silver-colored buttons on the connectors are pressed in.

*Make sure the angle of the tube connectors aligns with the connectors on the manikin. Adjust the angle if necessary.

Troubleshooting

When the tube connector cannot be inserted, verify if the silver-colored button is pressed in. If it is released, press it to unlock the connector. Ensure that the circle hole is not blocked.

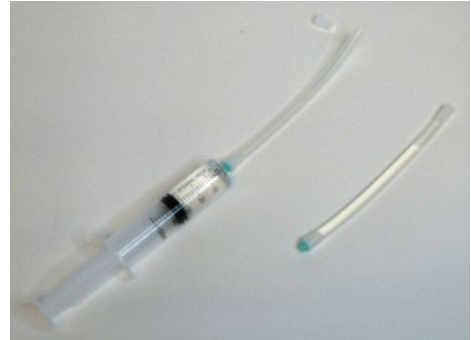


Preparation

Setting up the

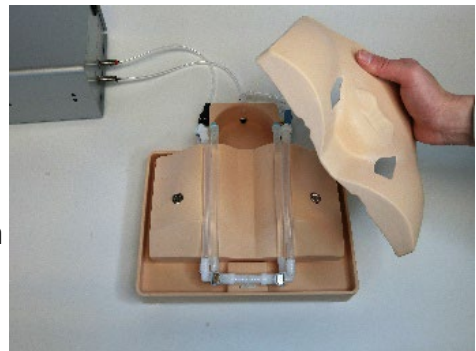
4. Filling the Vein Tubes

- i. Remove the caps from the vein tubes.
- ii. Fill the syringe with water.
- iii. Connect the syringe tip to the tube's injection port.
- iv. Hold the tube with the open end facing upward.
- v. Slowly push the plunger to fill the tube with water.
- vi. Once fully filled, securely replace the cap.

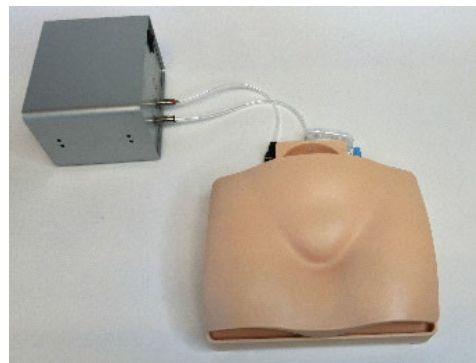


5. Assembly

- i. Place the filled vein tubes along the bilateral inner gutters.
- ii. Attach the upper section of the tube holder. To avoid pinching fingers, hold the indented area on the rear side of the upper section.
- iii. Cover the assembled system with the skin sheet.

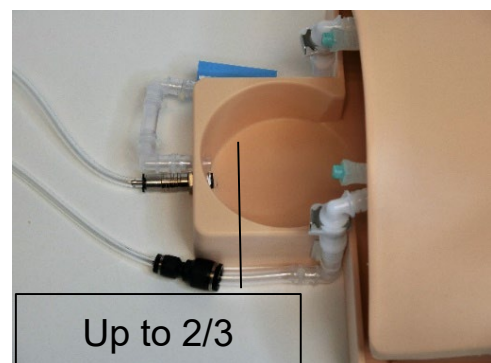


At the time of delivery, the manikin is pre-assembled.



6. Power Connection and Reservoir Filling

- i. Connect the AC adapter and power cable to the circulation pump, then plug into an outlet. (See page 5.)
- ii. Fill the reservoir with water or simulated blood (colored water) to approximately two-thirds of its capacity.



Training session

Training Session

1. **Turn on the circulation pump.**
2. **Verify that water or simulated blood is circulating through the tubing.**

If no flow is observed, check the connections of the power cable and tubing.

3. **Palpate the arterial pulse and perform arterial puncture.**

Recommended needle size: 21–23G

4. **Adjust the pulse strength** as needed using the adjustment clamp (from weakest [0] to strongest [5]).



Precautions

- Avoid operating the simulator for extended periods at the strongest pulse setting, as this may shorten the lifespan of the artery tubes.
- Do not remove the skin cover while the pump is running. Water may spurt from the needle holes.

Training session

Training Session

5. Observation of Counterflow (Flashback)

Adjust the pulse to the maximum setting before or after puncture.
Counterflow will cause the plunger to rise.

6. Ultrasound-Guided Arterial Puncture

Arteries and veins can be visualized using ultrasound, enabling training in ultrasound-guided arterial puncture.

- For improved ultrasound visibility, lightly moisten the rear side of the skin sheet to enhance adhesion to the holder and tubes.
- Do not apply ultrasound gel to the rear side of the skin sheet or to internal components, as this may cause pump malfunction.

Additional Notes

To simulate vein compression, reduce the amount of water in the vein tube.

Fill the tube to approximately three-fourths of its height and secure the cap.

With the syringe still attached, turn the tube and syringe assembly upside down, then use the syringe to adjust the air volume, leaving some air inside.

Finally, disconnect the syringe.

After training

Disassembly and Storage

1. **Turn off the power**
2. **Disconnect the connector at the head side of the left artery tube.**

Then connect the drainage tube to the same connector.

If necessary, press the silver-colored button on the connector to unlock (see page 6).

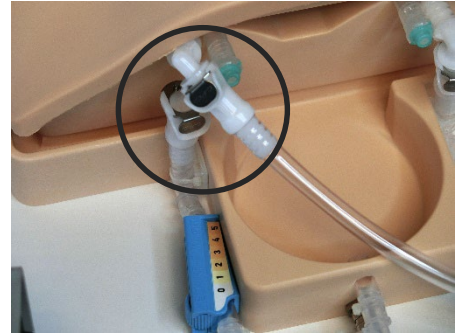
2. **Place the tip of the drainage tube into a plastic beaker.**
3. **Turn on the power.**
Run the pump briefly to drain the liquid from the reservoir and tubing.
2. **Once all liquid has been drained, turn off the power.**
3. **Remove the upper section of the tube holder.**
Then disconnect the vein and artery tubes.
Drain the water from the vein tubes.
Wipe off any remaining water from the tubes and pump with a dry cloth.

*Do not wipe the skin sheet, as friction may damage the surface.
Rinse the skin sheet with water and allow it to air dry.

6. **Remove the tube holder base from the tray**
and dry both parts with a cloth.
7. **After all parts are completely dry,**
reassemble them for storage.

Storage Precaution

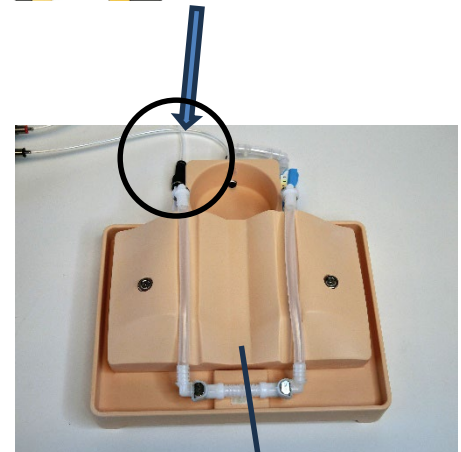
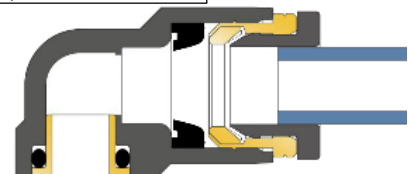
Do not store the product while it is wet, as this may cause mold growth.



1) Push the ring toward the connector



2) Pull off the tube



Tube holder base

Trouble shooting

Quick check-up before calling the customer service, when the you have problems in using the simulator. Look in the “cases” section for a description of the problem to find a possible solution.

What happened?	Causes and Solutions
Cannot connect artery tubes.	Press the silver colored button on the connector until a click heard to release the lock. (See page 6)
The circulation pump is running but the liquid does not flow.	• The tubing is clogged. • The tubing connections are not properly secured. • The liquid volume is insufficient. The tubing is incorrectly connected. • The circulation pump is malfunctioning.
Ultrasound image is unclear.	Lightly moisten the rear surface of the skin sheet to enhance adhesion to the tubes and tube holder.
Leakage from the puncture sites.	The skin sheet and the artery tubes are worn. Replace them with a new skin and tubes.
Leakage from the pump or the manikin other than the puncture sites.	• Connections are incomplete. • The volume of the liquid is excessive
Cannot observe the counterflow (even when the pulse setting is the strongest).	The artery tubes are worn out. Replace them with new tubes.

Consumable parts

code	name
11486-030	groin skin
11486-010	artery tube (set of 4)
11486-020	vein tube (set of 4)
11388-400	cotton swab red (set of 10)



groin skin artery tube (set of 4) vein tube (set of 4) cotton swab red (a set of 10)

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



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