

# Multipurpose Injection Training Arm

LM-074

## Instruction Manual

Thank you for purchasing the LM-074 Multipurpose Injection Training Arm. 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](mailto:customer@kokenmpc.co.jp)



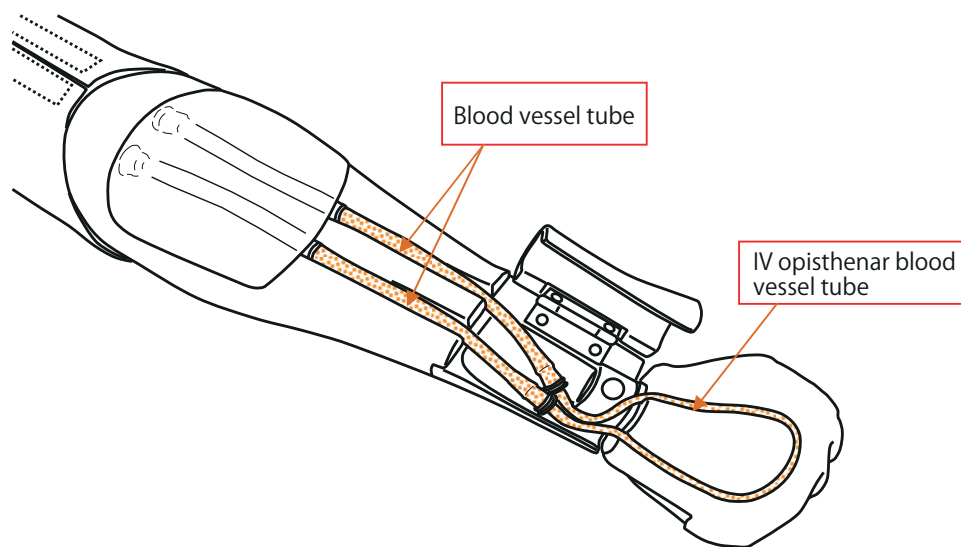


## Handling and Safety Precautions

**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:**

1. The model is made to simulate the texture of human skin. Rough handling may cause damage.
2. Do not place objects on the model, as this will cause deformation.
3. To clean difficult-to-remove smudges or marks, wipe with moist gauze or similar material using a neutral solvent diluted with water. Do not use thinners, benzene, or similar solvents.
4. Almost no fluid leakage will occur when the simulated blood vessels, various injection sites, or skin are punctured with a needle. However, sites that are punctured repeatedly will gradually begin to leak and should be replaced with new parts as needed.
5. The IV opisthenar blood vessel tube and blood vessel tube degrade over time. Check the degree to which they have degraded before use. If they are overly degraded, please replace them.



6. Use of thicker needles will shorten the life of the simulated blood vessels and injection sites.
7. When not in use, store the model away from direct sunlight and ultraviolet light.

1. The contents of this instruction manual are subject to change without notice.
2. This instruction manual may not be reproduced in part or in its entirety without permission.
3. Please contact the manufacturer in the event that any errors or omissions are found in the contents of this instruction manual.
4. This product should be used only as described in this instruction manual. In particular, the product should not be used in any way that contravenes the precautions noted in the instruction manual.

## Table of Contents

1. Outline and Features
2. Components and Configuration
3. Stand Assembly
4. Hypodermic Injection Configuration
5. Set-up for Hypodermic Injection
6. Care for Hypodermic Injection Parts
7. Intramuscular Injection Configuration
8. Set-up for Intramuscular Injection
9. Care for Intramuscular Injection Parts
10. IV Injection Configuration
11. Set-up for IV Injection
12. Care for IV Injection
13. Replacement of the blood vessel tube, blood vessel connector and IV opisthenar blood vessel tube
14. Specifications

# 1. Outline and Features

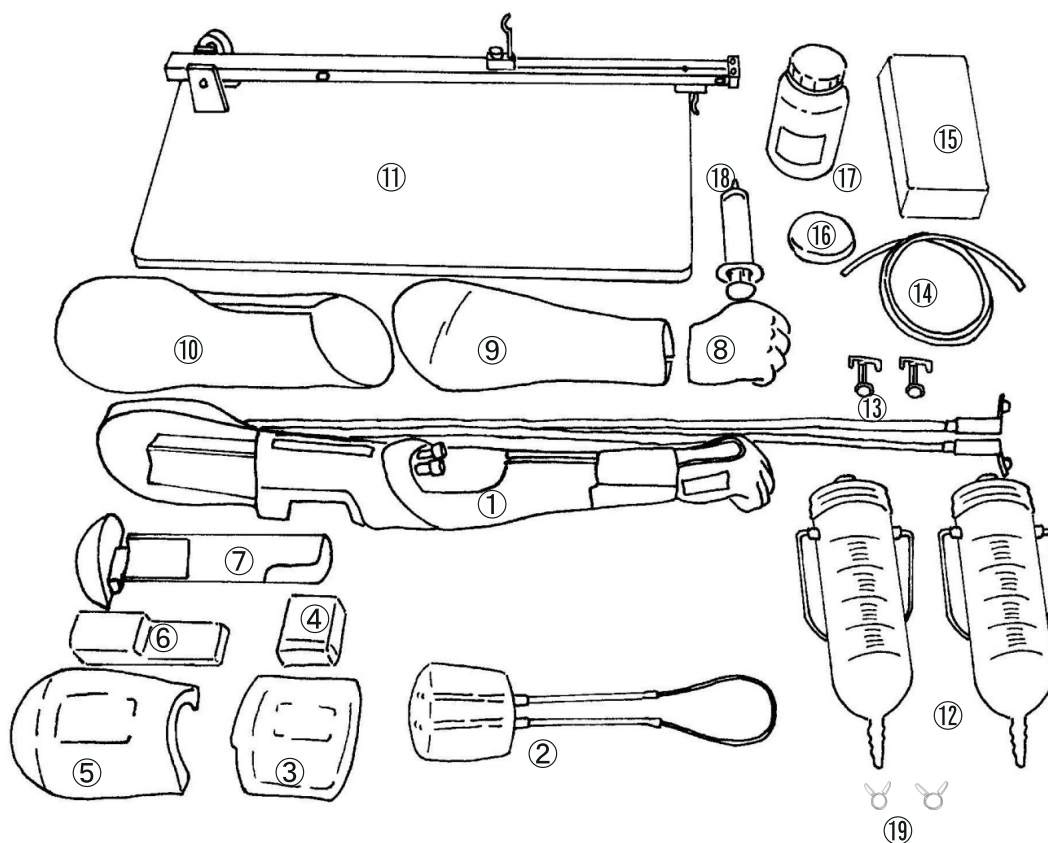
## Outline

- Three different injection techniques—intramuscular injection, hypodermic injection, and IV injection—can be practiced with this single model. Moreover, intravenous (IV) injection can be practiced in the median antebrachial vein and opisthenar vein, allowing a total of four different injection techniques to be practiced.
- With the simulated blood vessels wrapped in silicone gel, the vessels can more realistically slip away during puncture or be punctured completely through, events that could not be reproduced with the previous model.

## Features

- Silicone is used in the skin and other main parts, so the look, feel, and puncture sensation are similar to those of a real human body, which enables more realistic practice.
- Since four different techniques can be practiced with this single model, use of several models as in the past is no longer necessary, and set-up and clean-up/re-storage times are reduced.
- With a movable shoulder, elbow, and wrist, realistic body positions can be reproduced for each technique.
- The skin (silicone) can withstand many punctures without leaving visible needle holes, and thus is able to be used for a large number of practices.
- Blood can be removed with a vacuum blood collection tube or a syringe.

## 2. Components and Configuration



|   | Names of the Components         | Quantity |
|---|---------------------------------|----------|
| ① | Main body                       | 1        |
| ② | IV injection site               | 1        |
| ③ | Hypodermic injection site       | 1        |
| ④ | Hypodermic injection sponge     | 1        |
| ⑤ | Intramuscular injection gel bag | 1        |
| ⑥ | Intramuscular injection sponge  | 1        |
| ⑦ | Acromial part                   | 1        |
| ⑧ | Arm skin (hand)                 | 1        |
| ⑨ | Arm skin (forearm)              | 1        |
| ⑩ | Arm skin (upper arm)            | 1        |
| ⑪ | Stand                           | 1        |
| ⑫ | Irrigators                      | 2        |
| ⑬ | Pinch cock                      | 2        |
| ⑭ | Drainage tube                   | 1        |
| ⑮ | Elbow rest                      | 1        |
| ⑯ | Baby powder                     | 1        |
| ⑰ | Simulated blood (500ml)         | 1        |
| ⑱ | Syringe 50 ml                   | 1        |
| ⑲ | Hose clamps                     | 2        |
|   | Instruction Manual              | 1        |
|   | Storage bag                     | 1        |

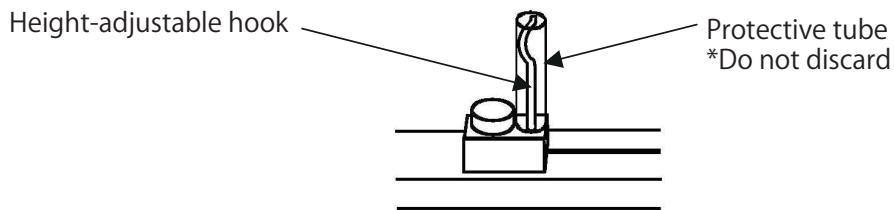
### 3. Stand Assembly

\*When the Training Arm is delivered, the height-adjustable hook will be covered with a protective tube.

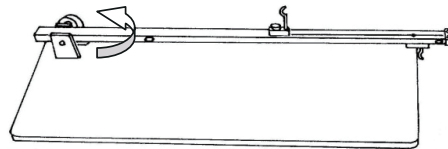
Do not discard this tube.

Remove the tube to use the hook during IV injections.

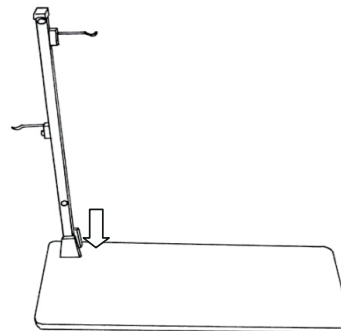
When practicing techniques other than IV injection, or when storing the Training Arm, cover the hook with the tube. When left uncovered, the hook may be deformed or damage the storage bag.



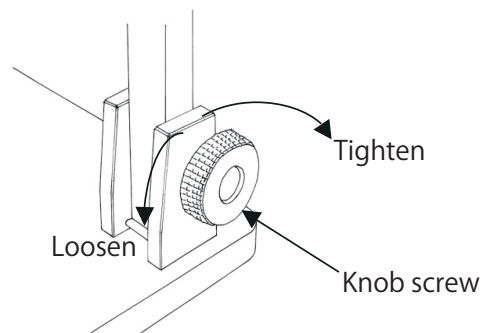
1. Pull the stand pole upright.



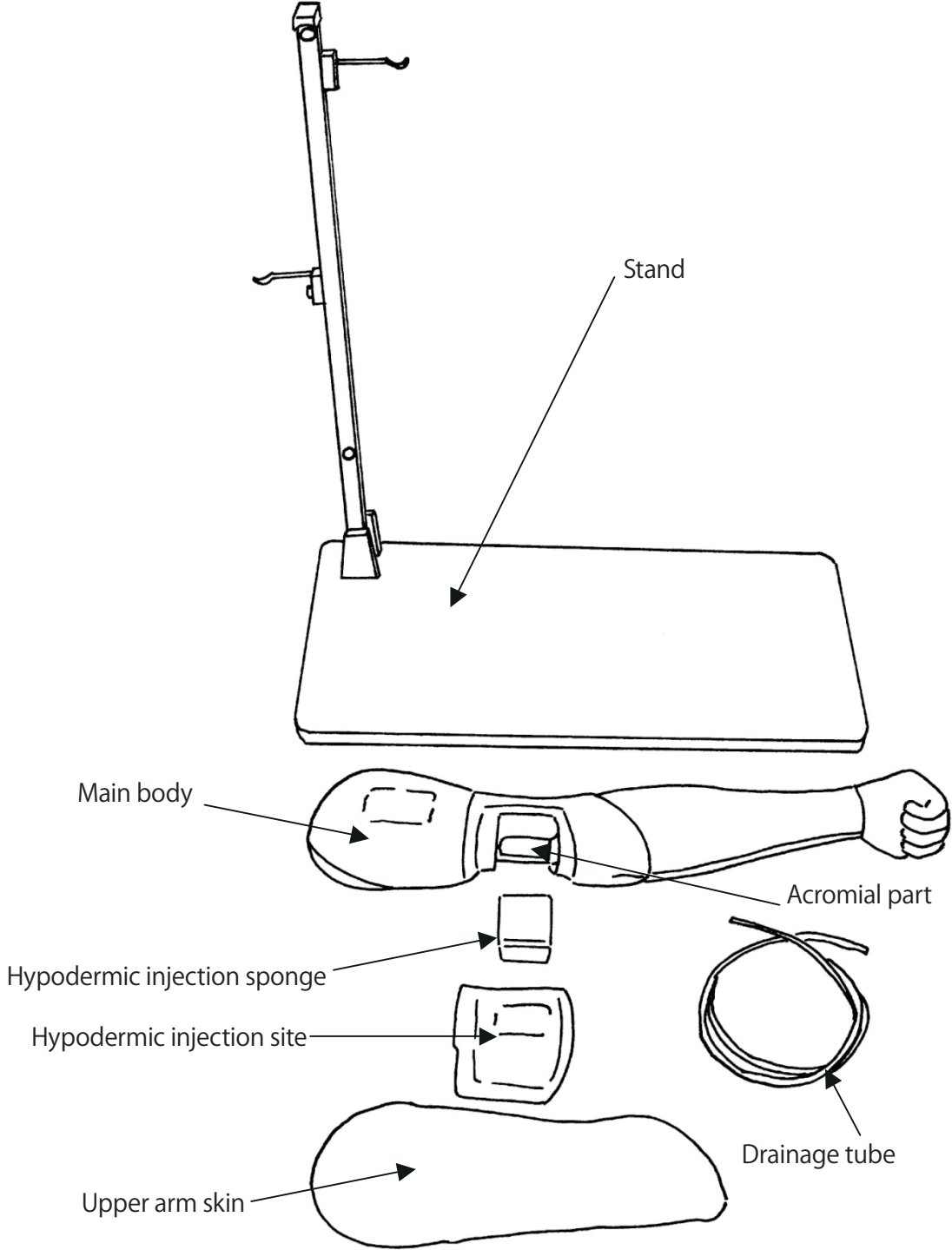
2. Push the pole down until the base of the pole contacts the seat.



3. Turn the knob screw to fasten the pole.



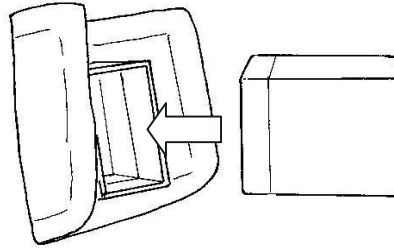
# 4. Hypodermic Injection Configuration



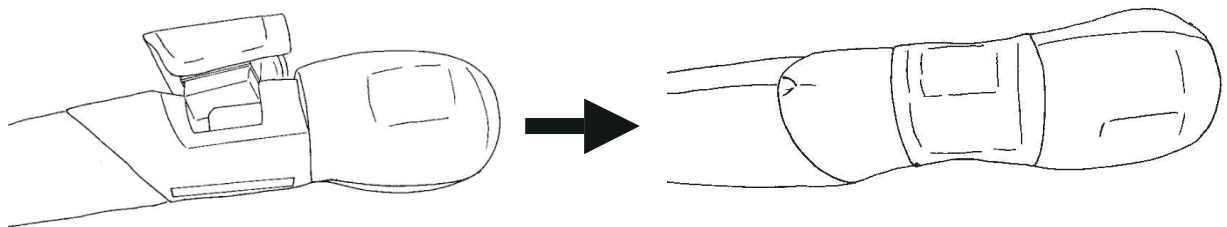


## 5. Set-up for Hypodermic Injection

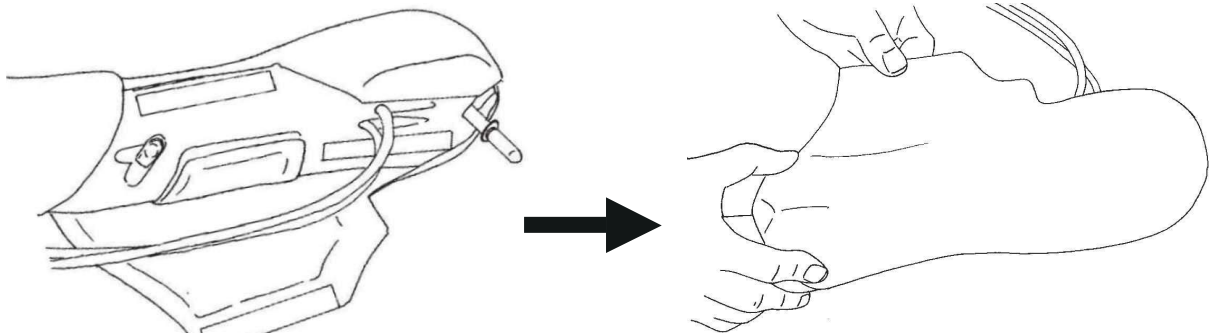
1. First apply baby powder to the surface of the hypodermic injection site, and then set the hypodermic injection sponge in place.



2. Insert the hypodermic injection site into the acromial part installed in the main body.

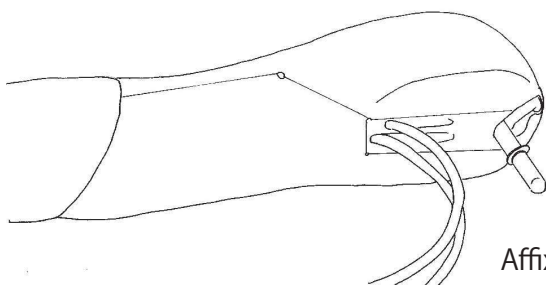


3. Apply baby powder to the upper arm skin, and position on the main body.



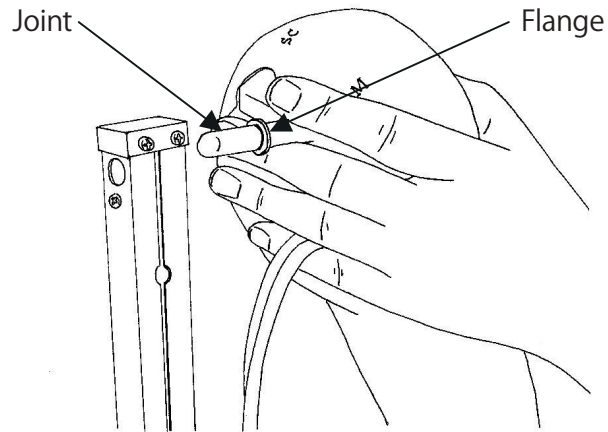
Affix hook-and-loop fasteners on one side.

Set skin in place while aligning the skin and point of the elbow on the main body.

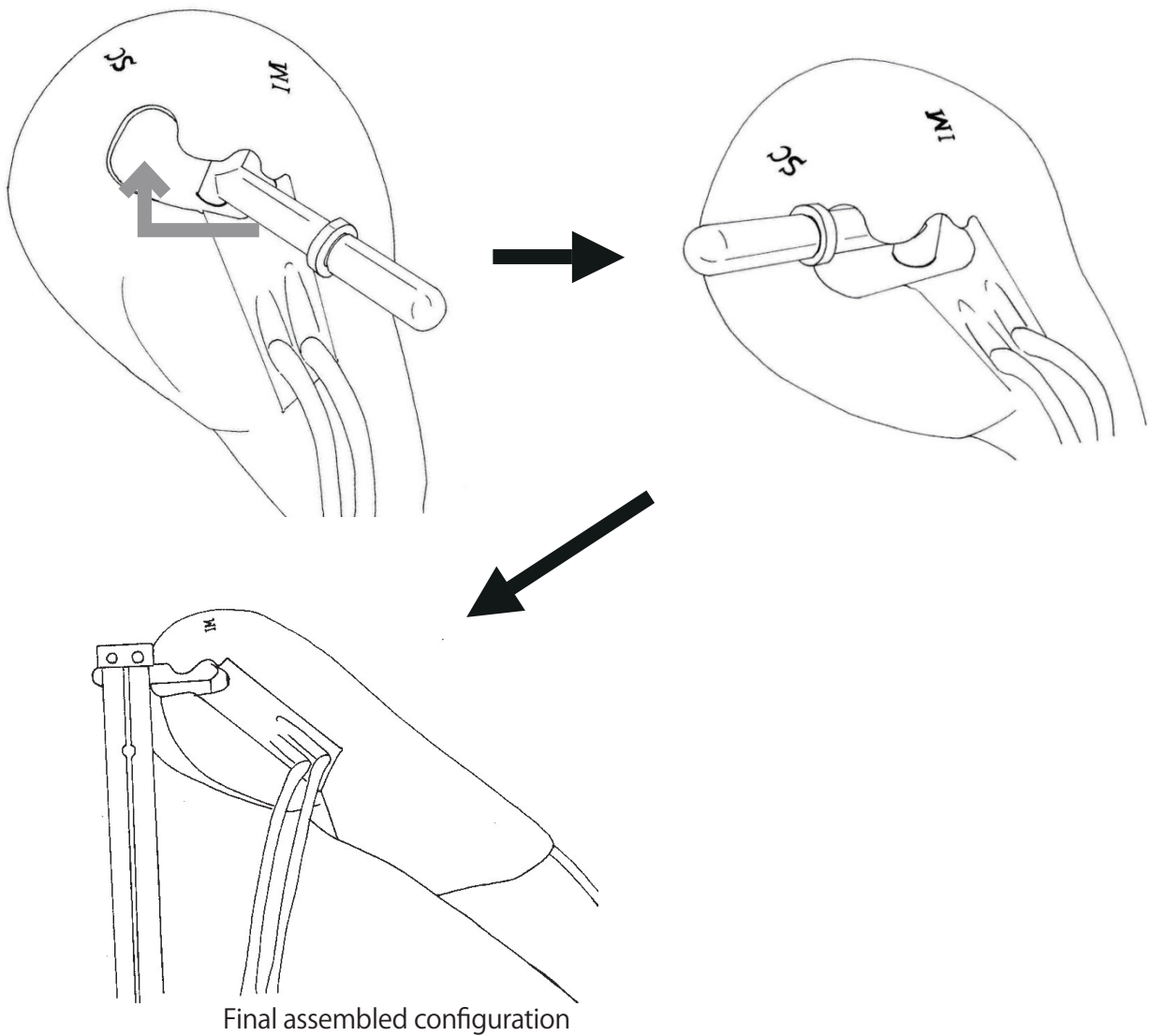


Affix the remaining hook-and-loop fasteners.

4. While supporting the joint protruding from the main body, insert it into the hole in the upper portion of the pole until the flange on the joint makes contact with the pole.



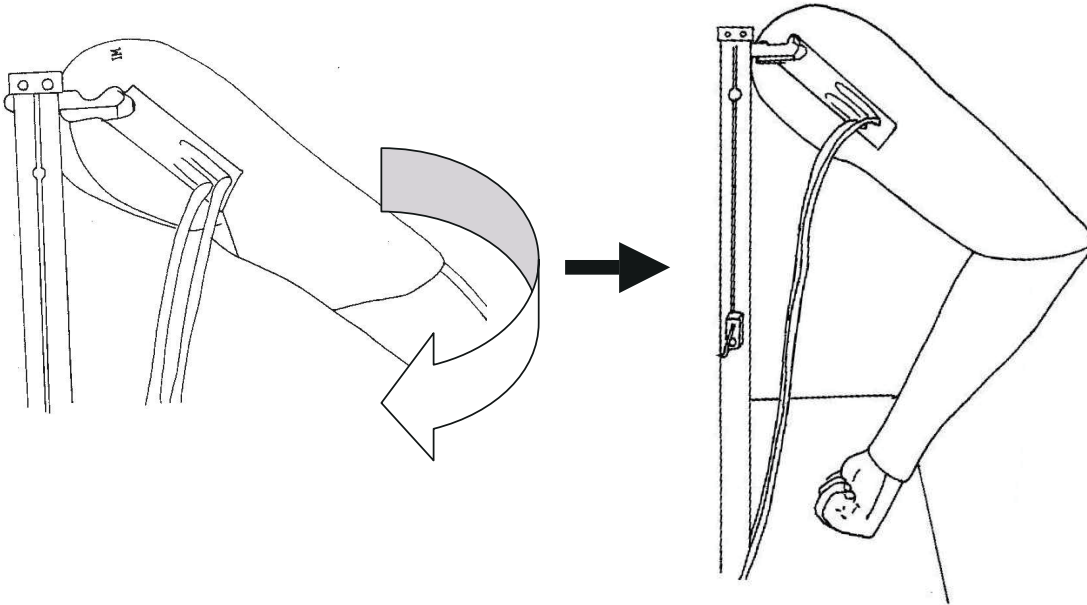
5. Put the joint into the groove labeled SC on the main body.



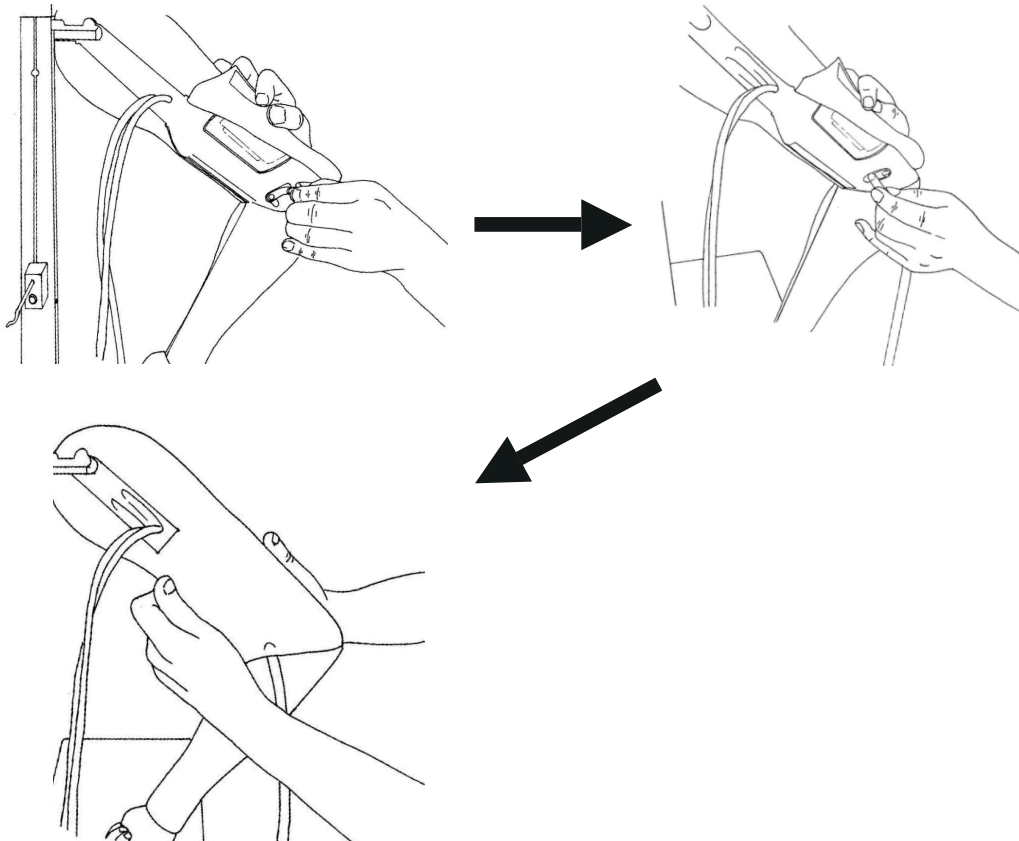
6. Rotate the elbow 180° .

\*Because of the structure of the Training Arm, the direction of rotation is opposite that of the human body.

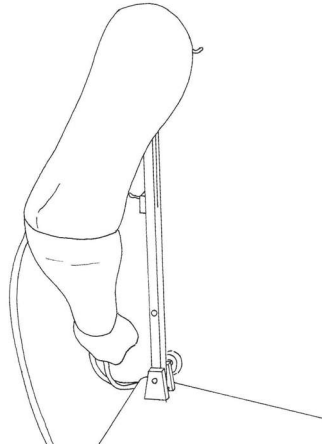
Use caution, as rotating the Training Arm in the incorrect direction may cause damage.



7. Pull back the skin, and attach the drainage tube to the drainage tube connector on the main body. Place the tip of the drainage tube into a drainage receptacle.



8. The hypodermic injection setup is now complete.

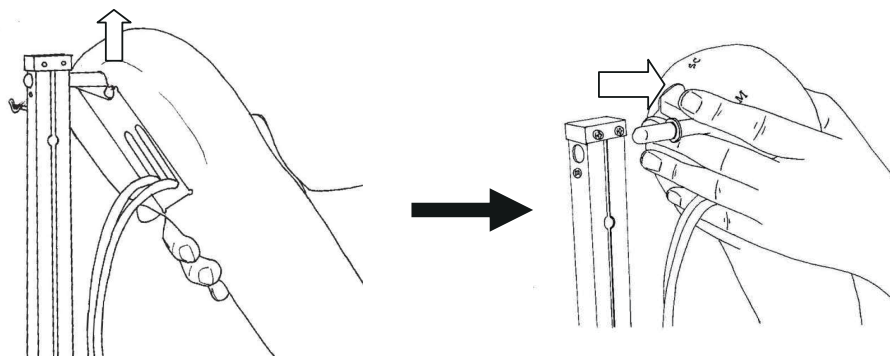


\*When performing IV injections after first practicing hypodermic injections, drain and dispose of the fluid remaining in the hypodermic injection site before practicing IV injections.

\*After practicing, dry the water from the hypodermic injection sponge well. Inadequate drying may result in mold.

## 6. Care for Hypodermic Injection Parts

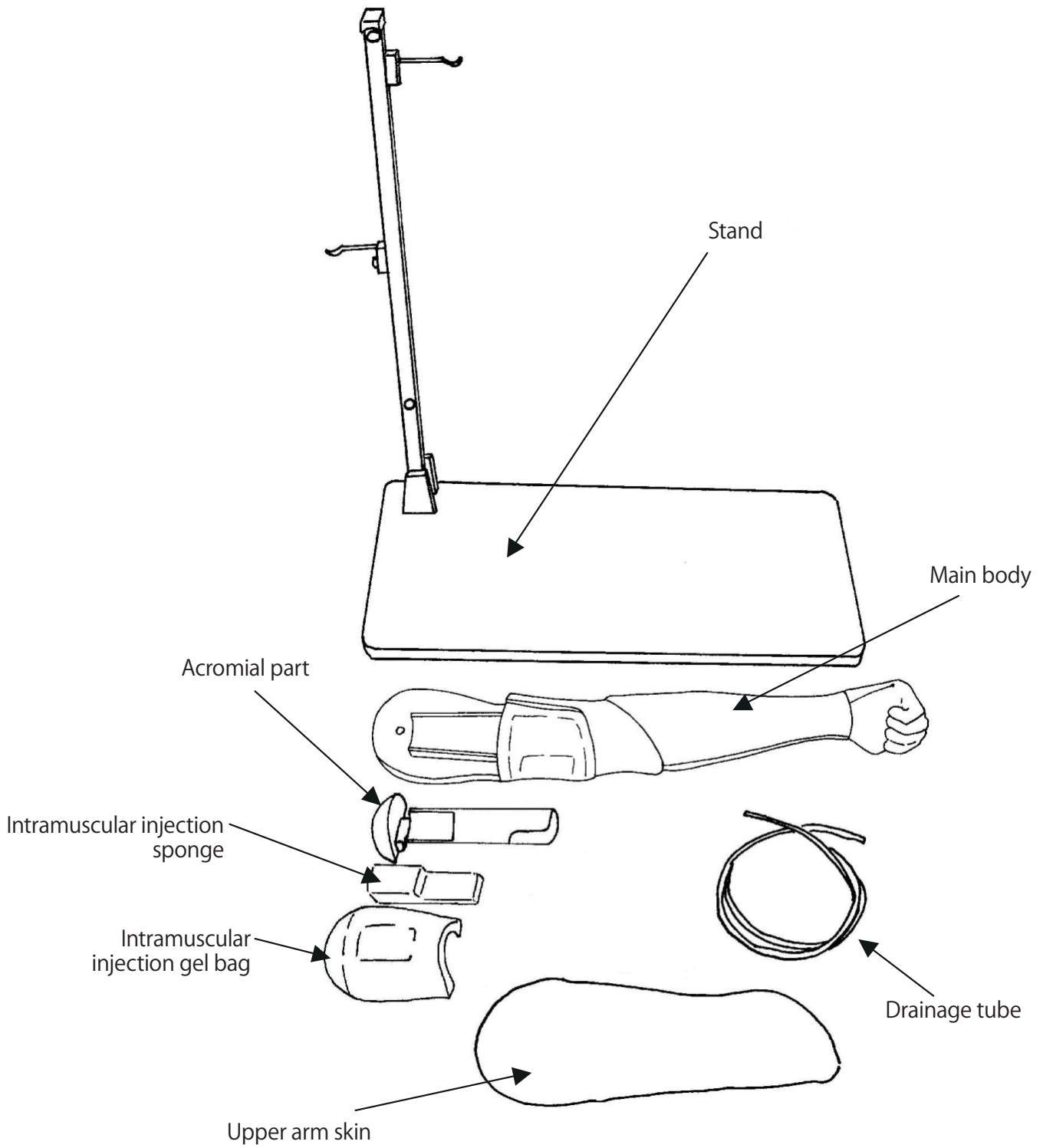
1. Remove the main body from the stand pole.



When attached to the pole, the main body can be removed by raising slightly and then pulling.

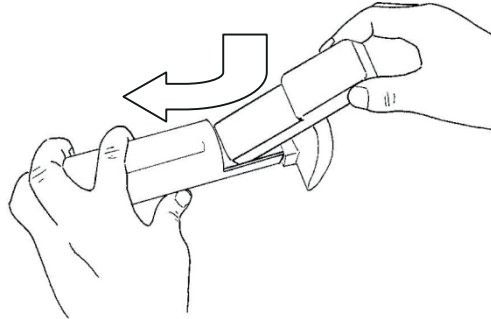
2. Take off upper arm skin and remove hypodermic injection site and hypodermic injection sponge.
3. Squeeze gently to remove any fluid remaining in the hypodermic injection site and sponge.
4. Dry moisture remaining in all components. Insufficient drying may lead to mold. After drying, always apply baby powder. If this is not done, the skin and injection site may stick together and make set up difficult the next time the Training Arm is used.
5. Wipe off any fluid remaining on the main body. If difficult-to-remove smudges or marks are present, wash with water and dry thoroughly.

## 7. Intramuscular Injection Configuration

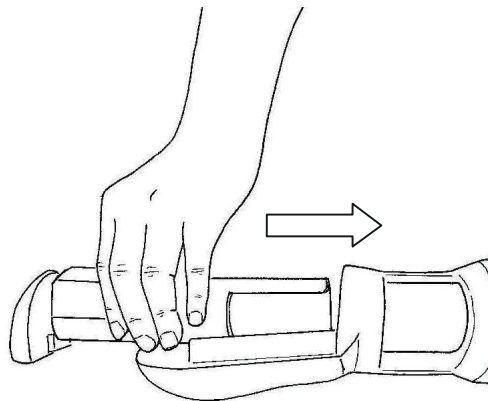


## 8. Set-up for Intramuscular Injection

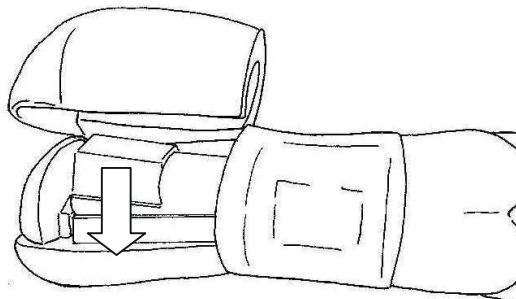
1. First apply baby powder to the intramuscular injection sponge and set it in the acromial part.



2. Set the acromial part in the main body.

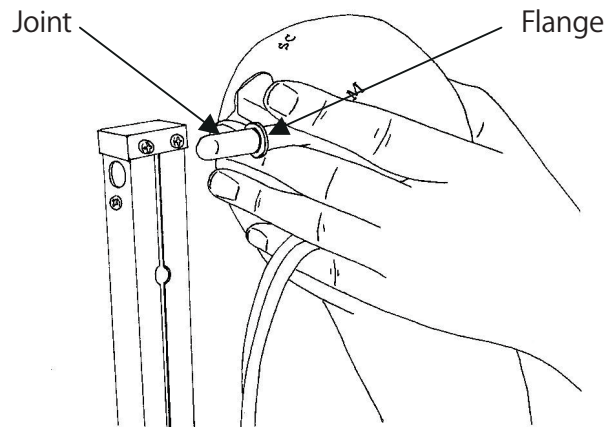


3. Apply baby powder to the intramuscular injection gel bag, and then place the injection site on the main body.

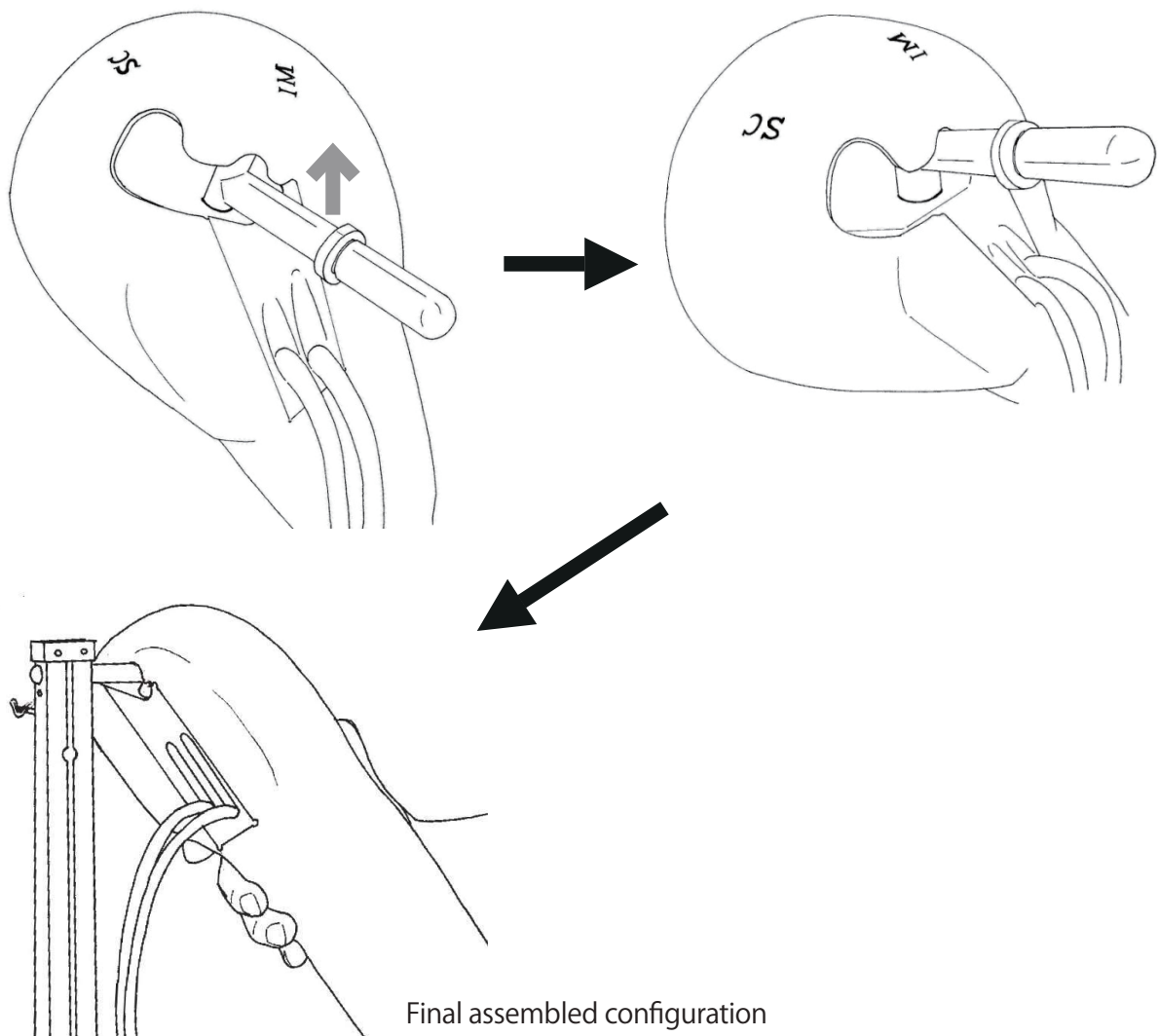


4. Set the upper arm skin in place in the same way as for hypodermic injection. (See 5. Setup for Hypodermic Injection, 3.)

5. While supporting the joint protruding from the main body, insert it into the hole in the upper portion of the pole until the flange on the joint makes contact with the pole.



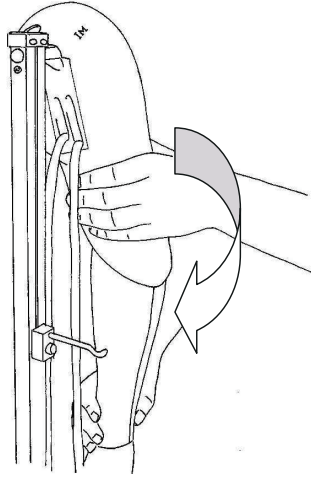
6. Insert the joint into the groove labeled IM on the main body.



7. Rotate the elbow 90°

\*Because of the structure of the Training Arm, the direction of rotation is opposite to that of the human body.

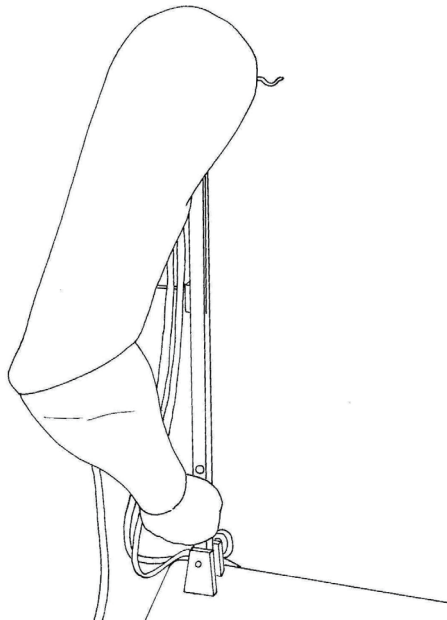
Use caution, as rotating the Training Arm in the incorrect direction may cause damage to the model.



8. Pull back the upper arm skin, and attach the drainage tube to the drainage tube connector on the main body, as for hypodermic injection. Place the tip of the drainage tube into a drainage receptacle.

(See 5. Setup for Hypodermic Injection, 7)

9. The intramuscular injection setup is now complete.



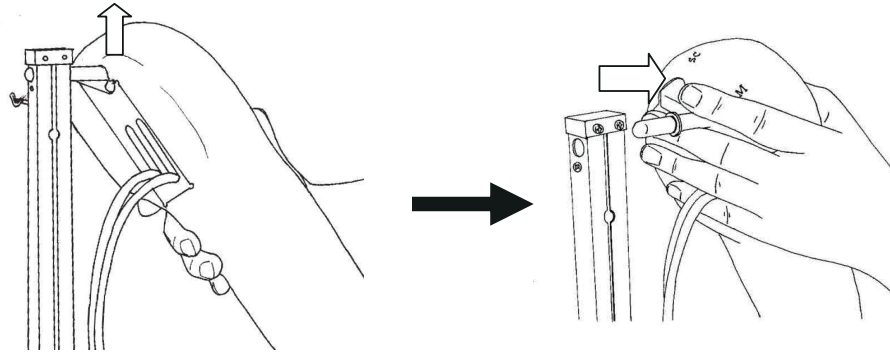
\*When performing IV injections after first practicing with the intramuscular injection site, drain and dispose of the fluid remaining in the intramuscular injection gel bag before practicing the IV injections.

\*After practicing, dry the intramuscular injection sponge well. Inadequate drying may result in mold.



## 9. Care for Intramuscular Injection Parts

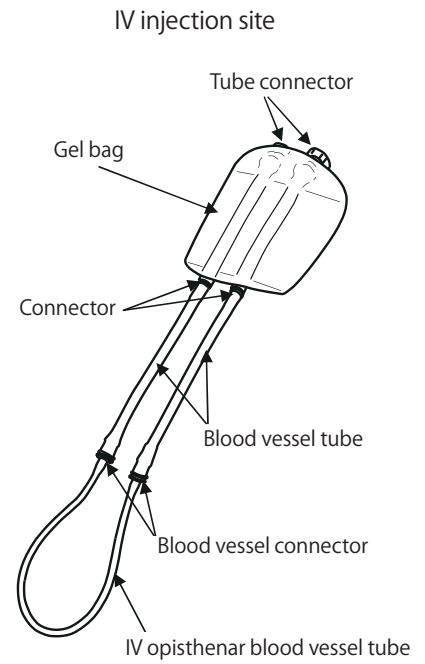
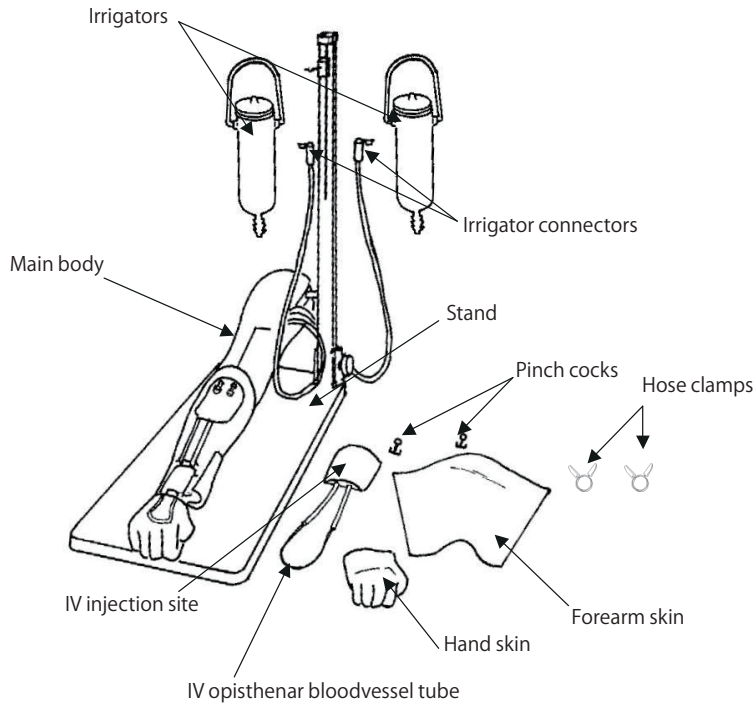
1. Remove the main body from the stand pole.



When attached to the pole, the main body can be removed by raising slightly and then pulling.

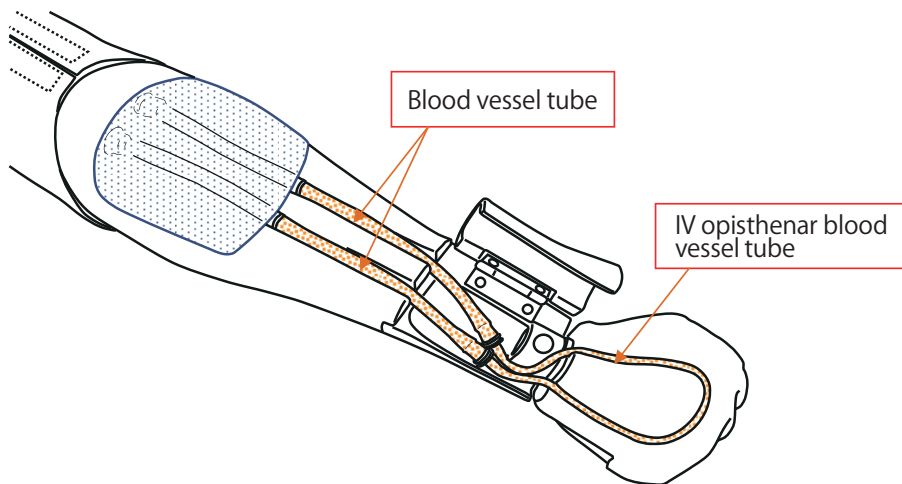
2. Take off upper arm skin and remove intramuscular injection gel bag and intramuscular injection sponge.
3. Squeeze gently to remove the fluid remaining in the intramuscular injection gel bag and sponge.
4. Dry moisture remaining on or in all components. Insufficient drying may lead to mold. After drying, always apply baby powder. If this is not done, the skin and injection site may stick together and make set up difficult the next time the Training Arm is used.
5. Wipe off fluid remaining on the main body. If difficult-to-remove smudges or marks are present, wash with water and dry thoroughly.

# 10. IV Injection Configuration



## \*Puncture site

The IV opisthenar blood vessel tube and blood vessel tube degrade over time. Check how far they have degraded before use. If they are overly degraded, replace with new parts.



## 11. Set-up for IV Injection

1. After applying baby powder to the IV injection site, pull out the tube connector (female) protruding from the main body by about 3 cm, and insert the IV injection site connector.

After confirming a solid connection, set in place in the main body.

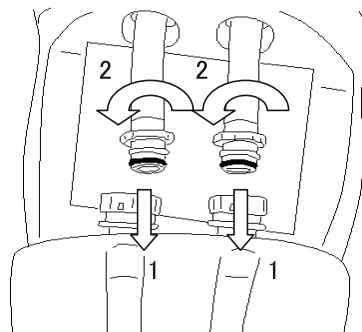
\*When pulling the tube connector out (female) from the main body, be careful not to pull too far.

If pulled too far, the spring protecting the tube will be stretched.

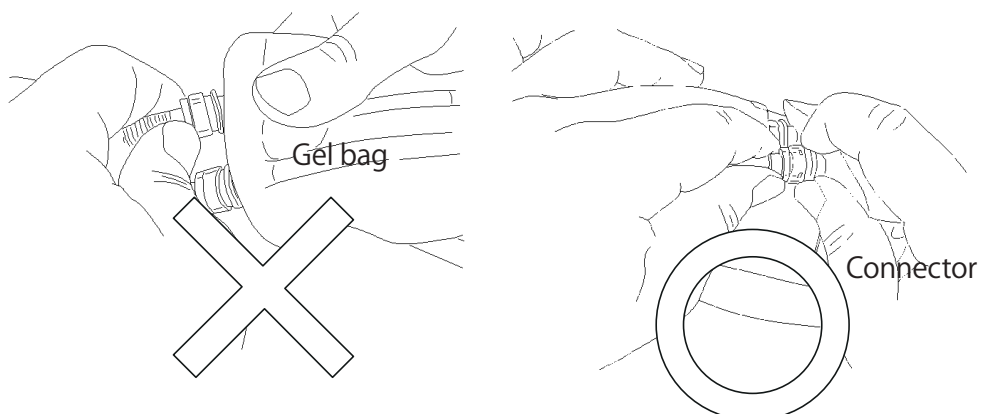
\*If the connection is not firm, leakage may occur. Confirm that the fit is solid.



When attaching the IV injection site, grasp the respective connectors, insert the connector on the side with the spring and turn in the direction shown in the diagram (about 45° ) until it stops.

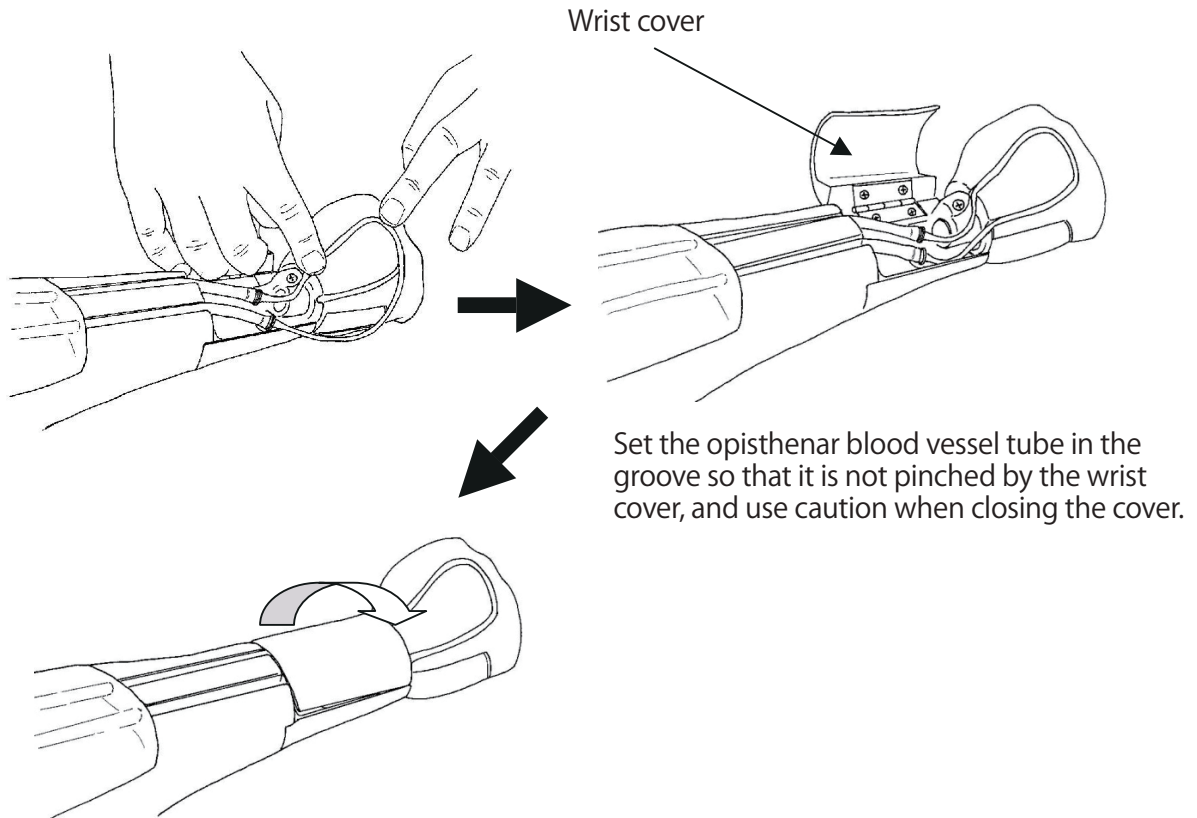


\*Do not grasp the gel bag portion of the injection site when attaching and removing the site. This may damage the injection site. Always grasp the connectors.

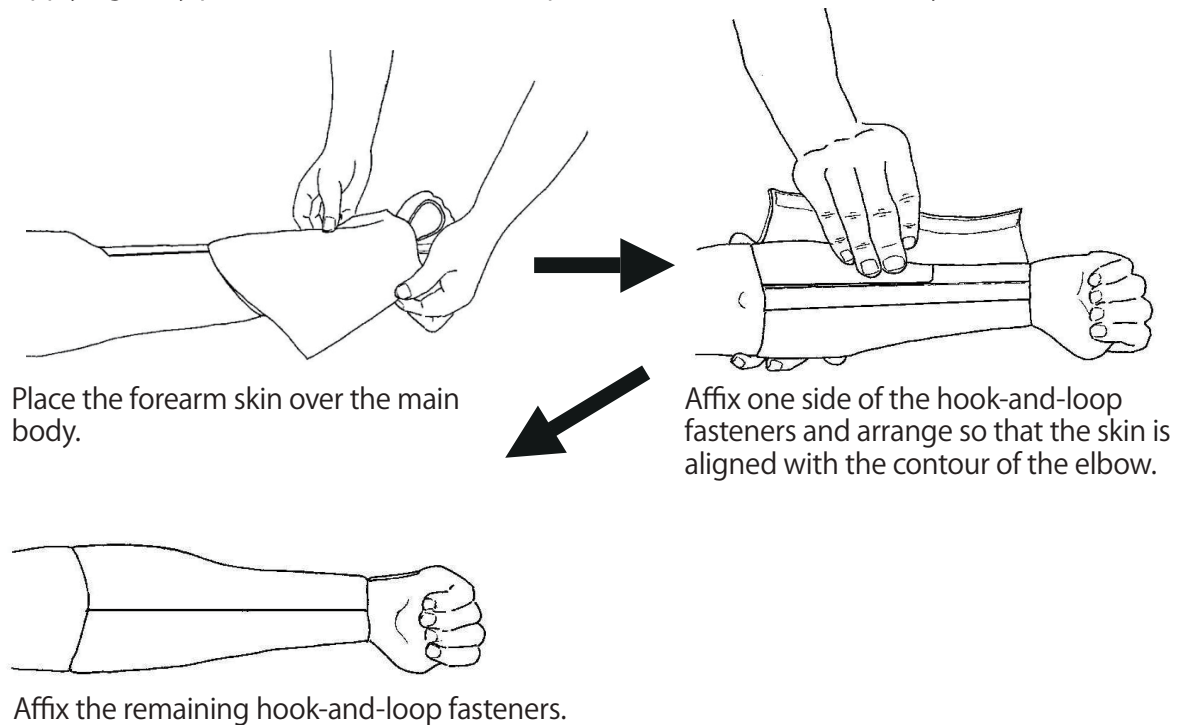


2. Open the wrist cover, insert the opisthenar blood vessel tube in the groove in the back of the hand as shown in the diagram, and close the cover.

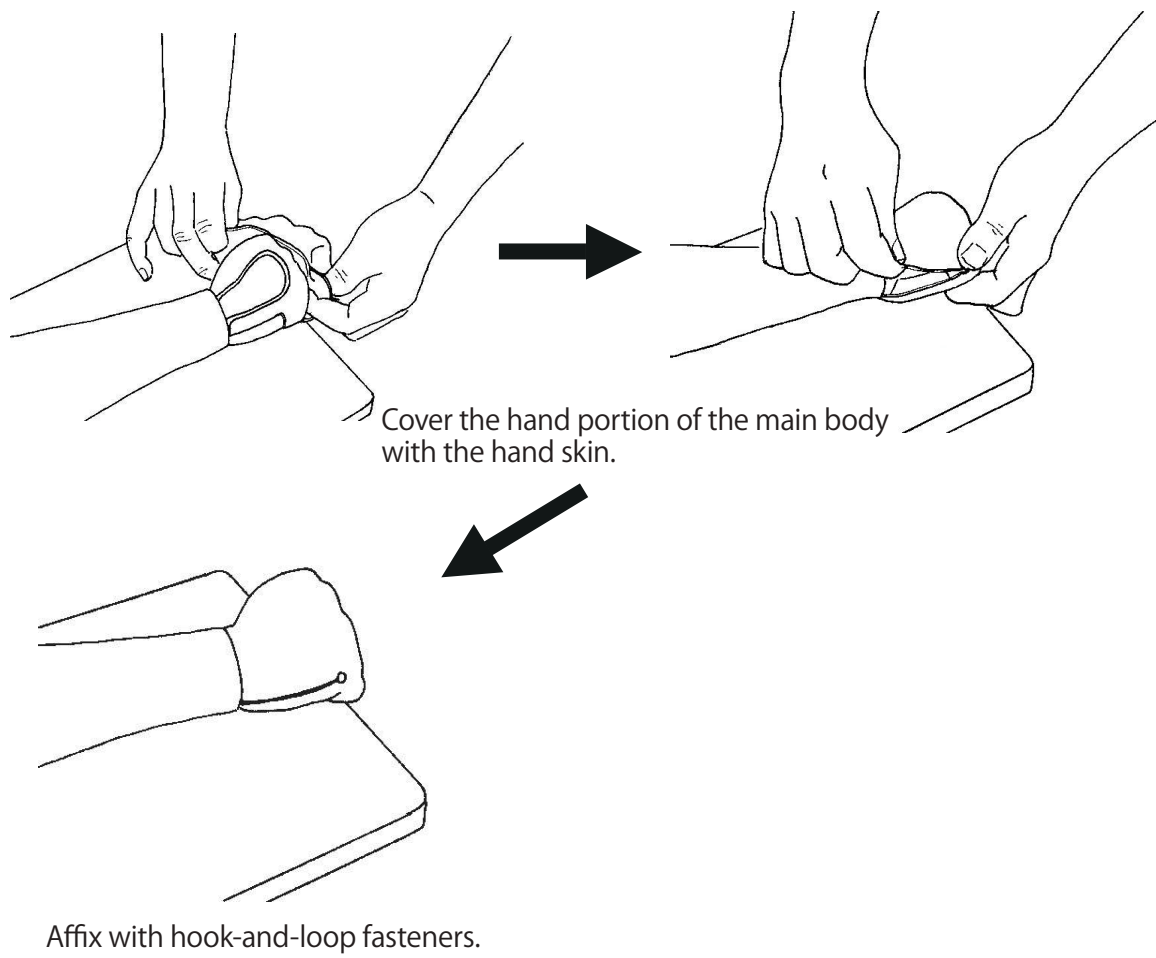
\*Be careful not to open the wrist cover too far. Damage may occur if the wrist cover is opened too far or excessive force is used.



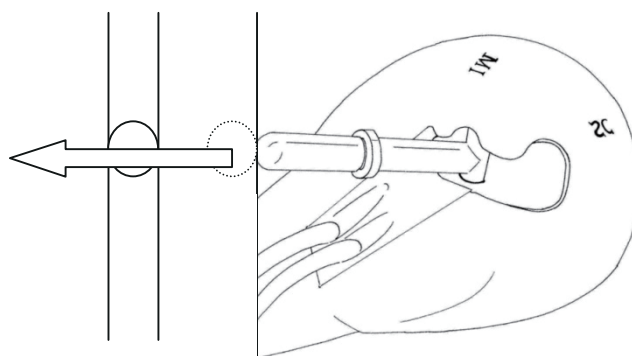
3. After applying baby powder to the forearm skin, place this skin on the main body.



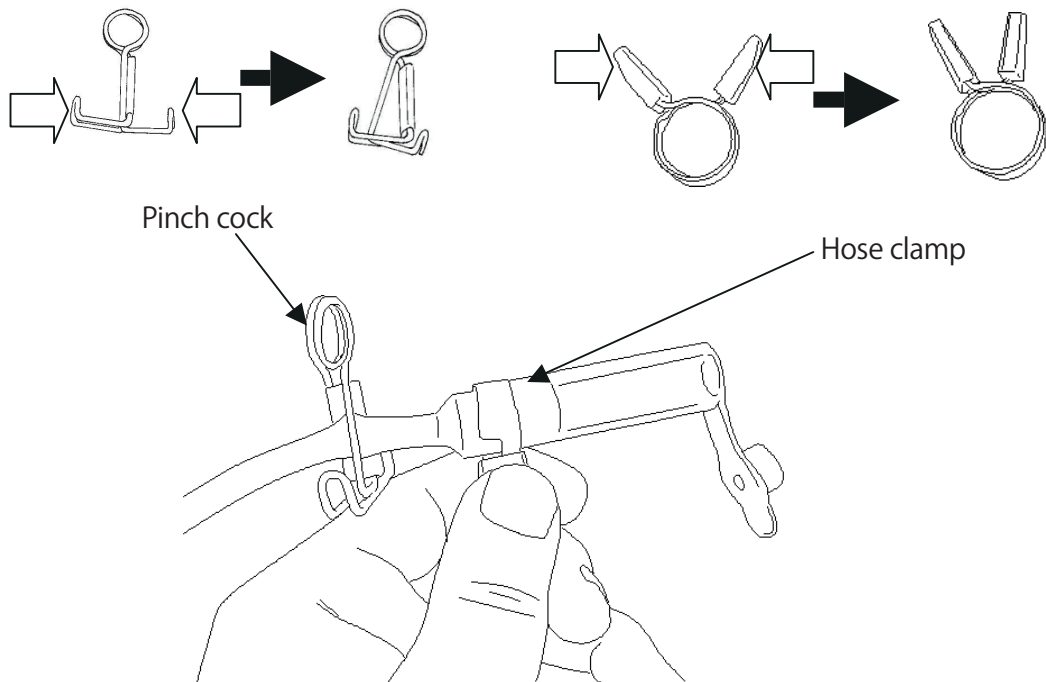
4. After applying baby powder to the hand skin, set it in place on the main body.



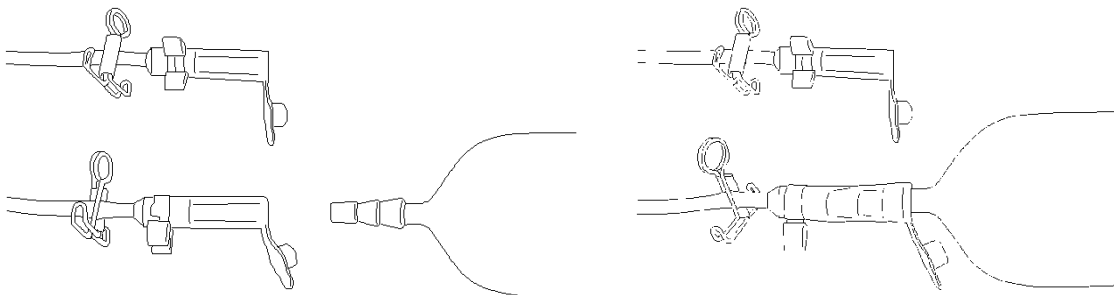
5. Insert the joint protruding from the main body into the hole in the lower portion of the stand pole until the flange makes contact with the pole.



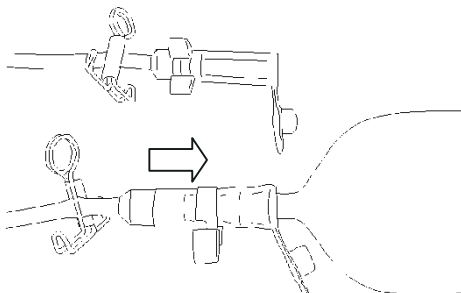
6. Pass the pinch cock and hose clamp over the tube from the side of the irrigator connector.



7. After setting the irrigator connector on the end of the irrigator, lower to the stand.

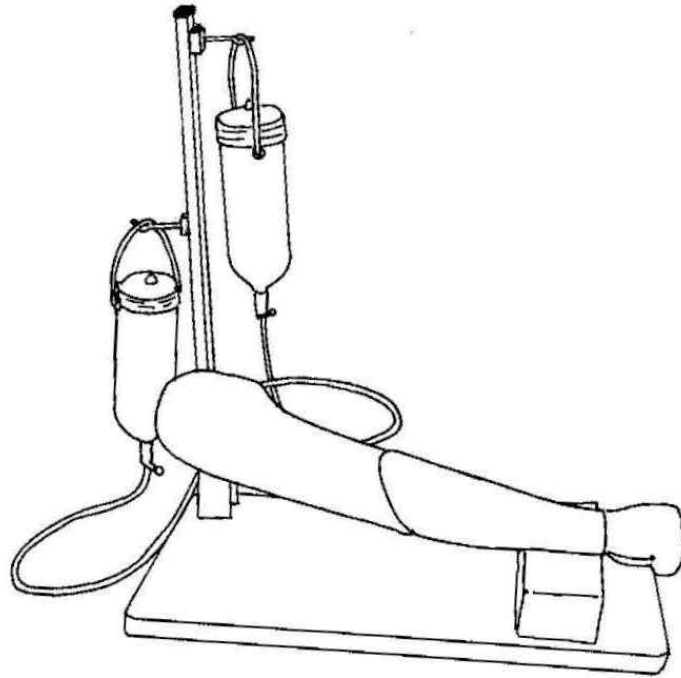


\*Insert the end of the irrigator firmly and deeply into the irrigator connector.  
Not inserting the end of the irrigator firmly enough may result in leakage of simulated blood.

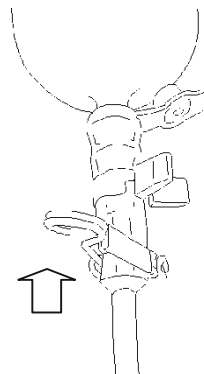


\*Slide the hose clamp in the direction indicated above, then fasten the connector.

8. The setup for IV injection is complete.

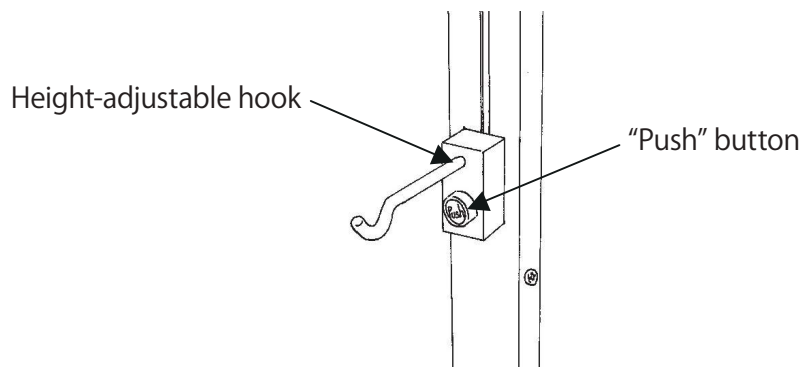


Open the irrigator lid and add simulated blood.



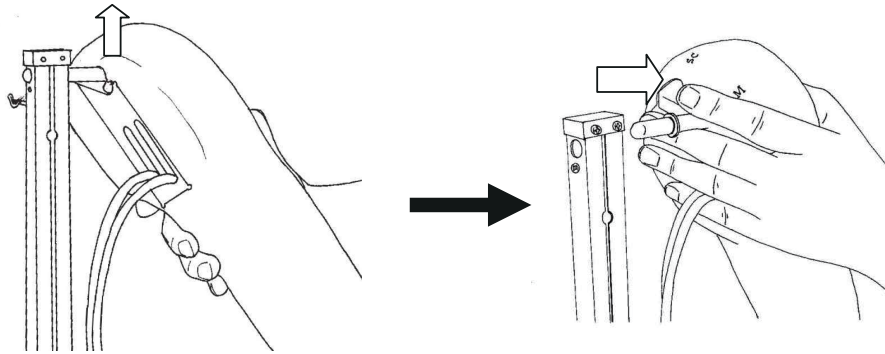
Move the position of the pinch cock from the tube toward the connector to start the circulation of simulated blood.

When the irrigator above is emptied of simulated blood, hold the "Push" button down while reversing the upper and lower height adjustable hook.



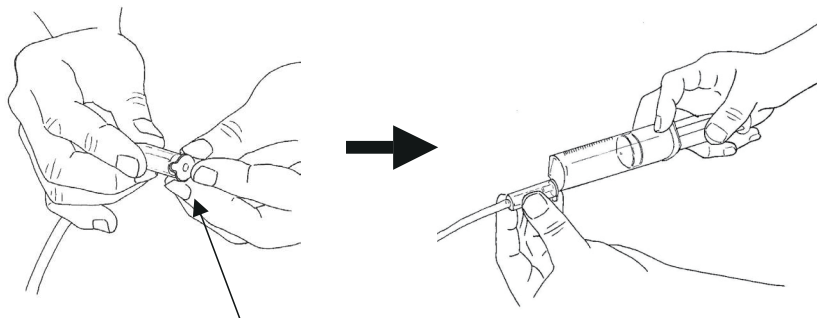
## 12. Care for IV Injection

1. Remove the main body from the stand pole.



When attached to the pole, the main body can be removed by raising slightly and then pulling.

2. Return the simulated blood in the irrigator to its original container.
3. Remove the irrigator from the blood vessel tube, wash with water, and dry.
4. With the lid of one irrigator connector open, put the irrigator into the simulated blood container. Close the lid of the other irrigator connector, attach an empty syringe to the end and push out the simulated blood in the blood vessel tube with air.



The connector lid is a one-way valve that is opened by inserting the end of a syringe.

5. After changing the connector from the simulated blood container to a drainage receptacle, fill the syringe with water, and wash the inside of the blood vessel tube using the same technique as in 3 above.

\*Do not press the syringe rapidly. This may push air or simulated blood into the IV injection site. If that happens, use a syringe with a needle to suction out the air or simulated blood.

6. Remove the forearm skin and IV injection site, and wash with water. If any simulated blood is present in the main body, wash it off as well. (There is almost no leakage from the IV injection site even if puncture occurs, but at times a small amount of leakage will occur on the skin surface when the needle is withdrawn.)
7. Dry after washing. Be sure to always apply baby powder after drying. If baby powder is not applied, the next time the Training Arm is used, the skin and injection sites or fleshy parts may stick together and make setup difficult.



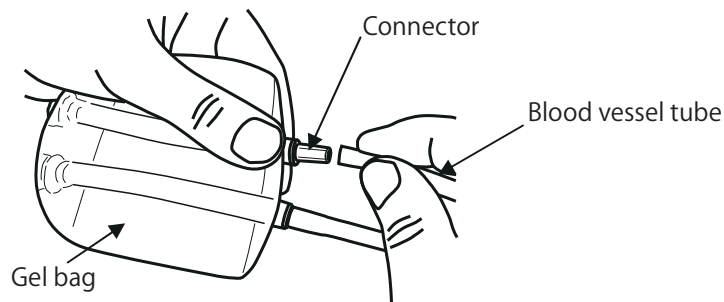
## 13. Replacement of the blood vessel tube, blood vessel connector and IV opisthenar blood vessel tube

### Blood vessel tube

1. Remove the old blood vessel tube from the gel bag and insert the new blood vessel tube deeply into the connector protruding from the gel bag.

\*When inserting the tube, maintain a grip on the base of the connector protruding from the gel bag as much as possible. Gripping the gel bag makes it difficult to insert the blood vessel tube and may damage the gel bag.

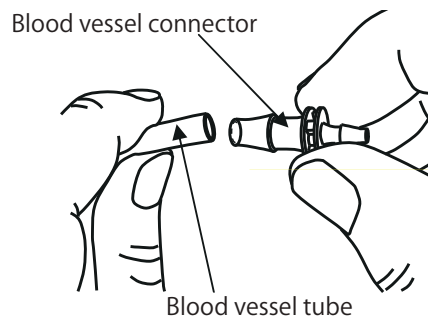
\* If the insertion is not firm, leakage may occur. Confirm that the insertion is solid.



### Blood vessel connector

1. Remove the old blood vessel tube from the blood vessel connector and insert the new blood vessel tube deeply into the blood vessel connector.

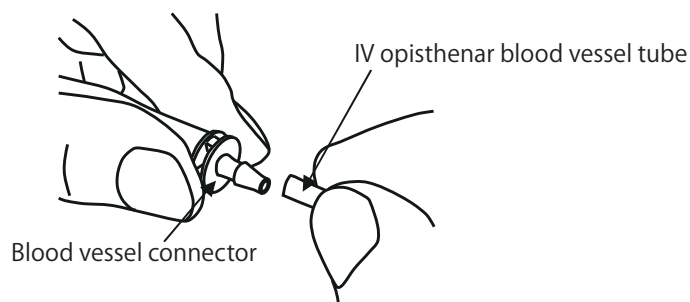
\*If the insertion is not firm, leakage may occur. Confirm that the insertion is solid.



### IV opisthenar blood vessel tube

1. Remove the old IV opisthenar blood vessel tube from the blood vessel connector and insert the new IV opisthenar blood vessel tube deeply into the blood vessel connector.

\*If the insertion is not firm, leakage may occur. Confirm that the insertion is solid.



## 14. Specifications

|               | Length        | Width         | Height        | Weight       |
|---------------|---------------|---------------|---------------|--------------|
| Arm main body | Approx. 63 cm | Approx. 10 cm | Approx. 11 cm | Approx. 3 kg |
| Stand         | Approx. 60 cm | Approx. 27 cm | Approx. 68 cm | Approx. 2 kg |