

SAKAMOTO Simulator System- M103 TOMOKO Plus



SAKAMOTO MODEL
CORPORATION

User's Manual (151218)

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! Note

Confirm the main unit and accessories directly after the product arrives. If there is any defect or breakage, inform the dealer or Sakamoto Model.

株式会社坂本モデル



Introduction

Thank you for purchasing our product,

TOMOKO Plus – Physical Assessment Doll.

Read this user’s manual carefully in order to use the product for a long time appropriately.

This product is closely checked before factory shipment. However, when this product arrives, open it soon, and check if anything on the main unit and accessories are missing or broken.

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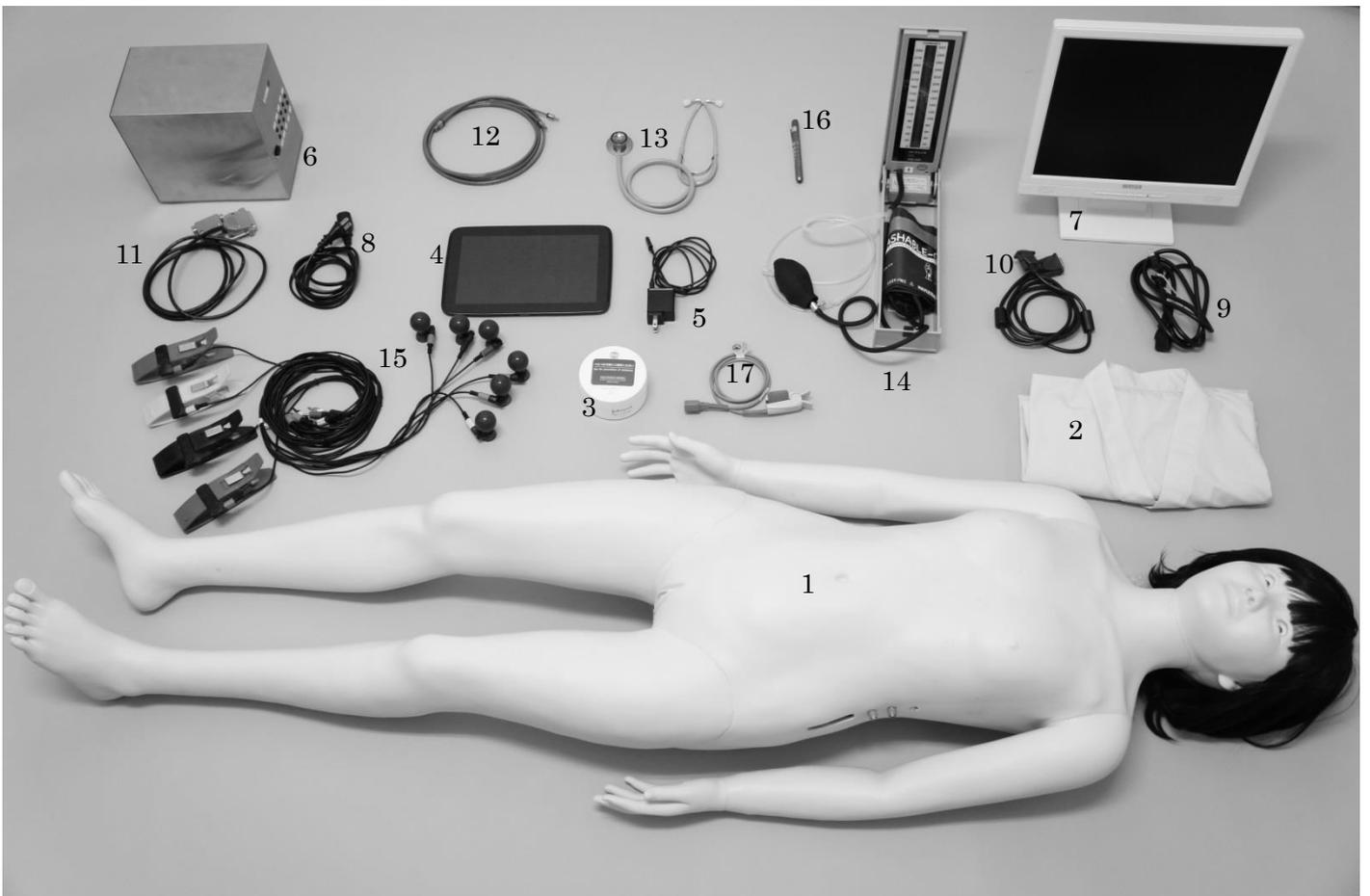
Purpose

Training can be performed for the following items:

- Breathing Rate
- Auscultation of Breathing Sound
- Pulse Palpation
- Auscultation of Heart Sound
- Blood Pressure Measurement
- ECG
- Pupillary Reflex
- Pulse Oximeter

Content

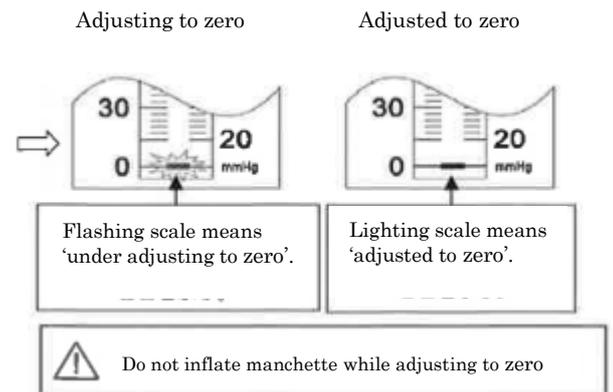
- | | | | |
|---|--------------------------------|-----|--|
| 1 | Main Doll Body (Including Wig) | 1 0 | Connection cord for Bedside Monitor |
| 2 | Pajamas | 1 1 | Main Connection cord |
| 3 | Baby Powder | 1 2 | Blue/Red cord |
| 4 | Tablet PC | 1 3 | Stethoscope |
| 5 | Charging cord for Tablet PC | 1 4 | Exclusive Sphygmomanometer
(with transparent connection tube) |
| 6 | Control Box | 1 5 | Exclusive electrodes with leads |
| 7 | Exclusive Bedside Monitor | 1 6 | Penlight |
| 8 | Power cord for Control Box | 1 7 | Exclusive pulse oximeter |
| 9 | Power cord for Bedside Monitor | | |



Precautions Concerning Handling

- 1 Do not store the model anywhere that is exposed to direct sunlight or is hot and humid to avoid deformation or transformation.
- 2 Do not put the model on print including newspapers because it is made of silicone and will easily become dirty or stained. Clean dirt from the skin by wiping it gently using neutral detergents, being careful that the detergent do not reach to the connection areas for cords of the doll.
- 3 Do not use any permanent markers or inks on the model because they will be absorbed into the skin and become impossible to remove.
- 4 Applying excessive load or dropping it down can cause damage to the model.
- 5 Keep the main doll body and machinery part away from applying water or soaking in water.
- 6 Do not strongly push the surface of the touch panel. And do not operate the tablet with sharped object such as a nails or ballpoint pen to avoid failure.
- 7 The power cable must be unplugged after turning off the power switch, which is placed on the back of the control box.
- 8 Do not unplug by pulling the cable, as this may cause damage.
- 9 Screen of Bedside monitor might freeze when any cord is disconnected from the control box while using. In that case, after correctly connecting the cord and turn the power of Control box on again.
- 1 0 When the values between the sphygmomanometer and Bedside Monitor discord greatly, please disconnect the transparent tube once and then remove the air in the manchette sufficiently. After that, connect them again.

- 1 1 Attached sphygmomanometer is an electronic sphygmomanometer. It has function of Zero-Setting, when the scale is flashing as the picture of on the right, please be careful not to inflate the manchette.



- 1 2 Product using temperature : 18-40°C

- 1 3 If anything strange is detected when this model is being used, stop using it and notify the dealer or us as soon as possible.
- 1 4 This product is a simulator for users to perform advanced training. Nonetheless, it does not guarantee that a simulator effect can be obtained by actual treatment.
- 1 5 Note in advance that this product is subject to change without notice to improve it.

Usage

Chapter 1: Set up

1 Take the main doll body, control box and tablet PC and accessories out of the case and place it on a non-slip desk surface.

2 Connect the Power cord for Control box.

3 Connect the Blue/Red cord both to the Control Box and the Doll. Make sure that the cable is firmly inserted. By following the colors indicated on each port, insert each ends of the cable into the corresponding holes. If you wish to put the Blue/Red cords while keeping the Pajamas on, insert the cords from the slit created under the left sleeve.



(Please refer to [Storage Method](#) 3)

4 Connect the Main Connection cord to both Control Box and the Doll. Align the notches in the plug. If you wish to plug the Blue/Red cords while keeping the Pajamas on, insert the cords from the slit created under the left sleeve.



Please be sure to connect all the cords firmly otherwise the Bedside Monitor will leave itself start up screen, not going ahead.

5 Connect the Power cord for Bedside Monitor. Then Connect the Bedside Monitor and Control Box with Connection cord for Bedside Monitor.



6 Connect Exclusive pulse oximeter to the Control Box.



- 7 Connect the Electrodes and Clip type Electrodes to each leads. Electrodes can be connected any leads but Clip type electrodes need to be connected to corresponding colored leads.



- 8 Connect transparent tubes which runs from the sphygmomanometer and from the main doll. You can connect or disconnect by simply screwing them. Please make sure that the manchette does not contain air in it before connecting.



- 9 Turn on the power of power of Control Box, Bedside Monitor and Tablet PC. Bedside monitor's screen will display as the right picture but this is not abnormal screen, please step forward.



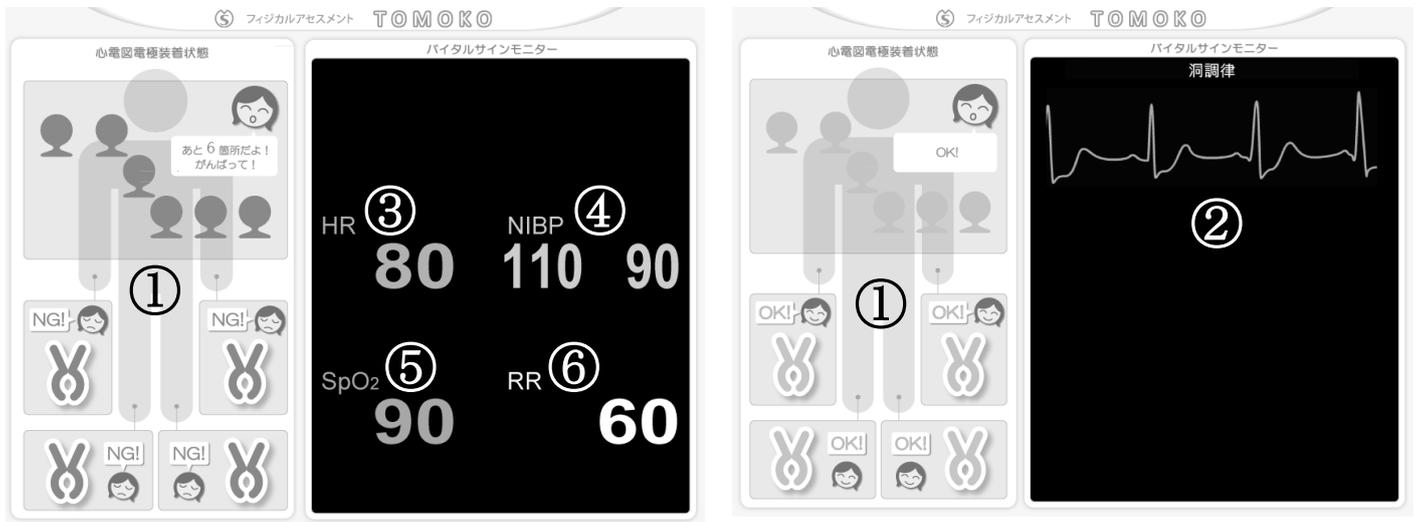
- 1 0 Go to「Settings」 of the Tablet. And then go to「WIRELESS & NETWORKS」. After that, confirm if the menu that the product's serial number represents is connected. If connected, please step forward. If not connected, please select the menu represented by the product's serial number, and input the passwords. Please contact us or the dealer for password. (If you enter once, subsequent input is not required.) Please make sure not to connect other networks to avoid abnormal operation.

- 1 1 Touch the Application icon of Tomoko Plus as right picture.



- 1 2 Select a language in the application on the Tablet, then start the practice.

Chapter 2: Bedside Monitor



- ① 10 electrode positions display.
Green light lit for correct attachment.
- ② ECG waves display. A wave selected by Tablet is presented.
While a wave is being presented, those from ③ to ⑥ disappear.
Wave only displays when all the electrodes are correctly attached.
- ③ Pulse Rate and Heart Rate display.
- ④ Blood Pressure displays. Left is the Upper and Right is the Lower.
- ⑤ SpO₂ of Pulse Oximeter displays.
Value only displays when the exclusive pulse oximeter is used.
- ⑥ Breathing Rate displays.

Chapter 3: Tablet

1 Language

Four languages –Japanese, English, Chinese, Korean are available.



2 Breathing Rate

Breathing rate can be set in 7 levels ranging from 10 to 40. (While 「Tachypnea (Consonating rates) 」 or 「Tachypnea (shallow respiration) 」 is selected, the range changes from 30 to 60.) It is possible to make the motion ON or OFF with the button on the upper left.



3 Breathing Sound

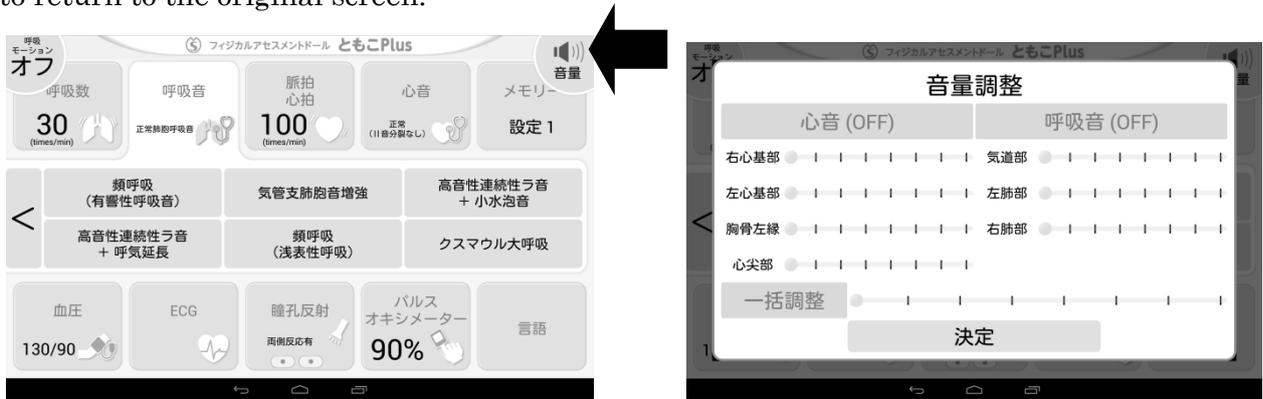
Set the Breathing motion OFF.

Breathing Sound can be set from 12 disease types. At first, 6 types are presented, then press 「>」 button to present the other 6 disease types to select from.

Auscultation is possible at Airway, Right lung and Left lung.



Press upper right button to move to volume control. It is possible to set each parts and also possible to mute Breathing Sound by pressing 「Breathing Sound (OFF)」。By the 「All Parts」 button, it is possible to control both Breathing and Heart Sound at the same time. Press 「OK」 to return to the original screen.



4 Pulse Rate / Heart Rate

Pulse Rate and Heart Rate can be set in 12 levels ranging from 30 to 140. Pulse can be checked at four places - carotid arteries, radial arteries.



5 Heart Sound

Set the Breathing motion OFF.

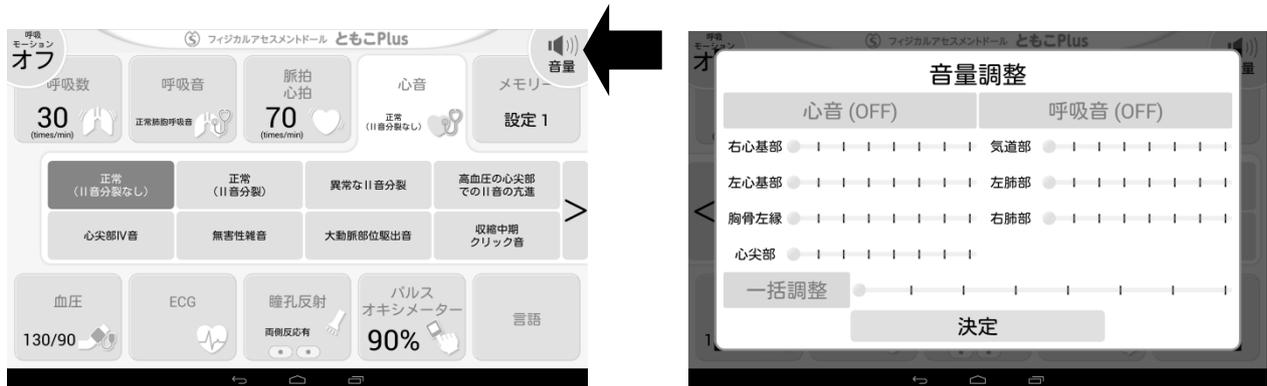
Heart Sound can be set from 20 disease types. At first, 8 types are presented, then press 「>」 button to present the other more disease types to select from.

Auscultation is possible at Right Cardiac base, Left cardiac base, Left sternal edge, Cardiac apex.



Press upper right button to move to volume control. It is possible to set each parts and also possible to mute Heart Sound by pressing 「Heart Sound (OFF)」 .

By the 「All Parts」 button, it is possible to control both Breathing and Heart Sound at the same time. Press 「OK」 to return to the original screen.



6 Blood Pressure

Blood Pressure can be set in range from 80 to 200mmHg for Systole (upper), from 50 to 120 for Diastole (lower). After pressing 「Systole (upper)」 or 「Diastole (lower)」 , set the desired value by the numbers in the center of the screen, then press 「OK」 to set the value.

Blood Pressure can be measured at both arms. When the blood pressure is off by 4 mmHg or more, refer to the blood pressure calibration in “Procedure - Practice 5.”



7 ECG

ECG can be set from 9 types.

Wave only displays on the Bedside Monitor when all the electrodes are correctly attached to TOMOKO’s body. Also wave displays only when the ECG menu is on the Tablet. (In case of moving to other functions such as 「Language」 or 「Breathing Rate」 , ECG function will be no longer valid, no wave and no indication of correct attachment of electrodes will be displayed on the Bedside Monitor.)



8 Pupillary Reflex

Both normal, abnormal Pupillary Reflex can be simulated. It is possible to check at both pupil.



9 Pulse Oximeter

SpO₂ of Pulse Oximeter can be set in 3 levels - 80% 90%、99%.

Only the exclusive pulse oximeter enclosed to the product can be used.

SpO₂ Value will only display when the exclusive pulse oximeter is attached to the Doll's finger.

※ Measuring pulse rate with exclusive pulse oximeter is not available.



10 My Settings

Any set of up to 5 can be saved and to be read.



Save

Select 「Save」 on the My Setting screen.

Select one setting from 「Setting 1」

to 「Setting 5」 .



To modify the title of the saved setting,
press 「Edit Title」



The will move to the title input page.
Push the blank to input the new title.
It will move to the character input screen.
Input any title (title will appear in the
circled part upper left) and press 「OK」
on the right.



New title will be shown at where the arrow mark
indicates. Press 「OK」 .

Now it is done.



Load

Press 「Load」 button on the My Settings.
Select a setting what you want to read,
Then press 「OK」 .

Now it is done.



Chapter 4: Practice

1 Breathing Rate

Breathing Rate can be checked by the movement of the chest.

Rate can be set at various range, ON/OFF of Breathing motion is possible.

Please refer to 「Usage Chapter 3 Tablet-2」 for details.

2 Auscultation of Breathing Sound

Set the Breathing motion OFF.

Please refer to 「Usage Chapter 3 Tablet-2」 for details.

Prepare the enclosed stethoscope.

Auscultation is possible at Airway, Right lung and Left lung.

Breathing Sound can be set from 12 disease types. (Refer to the below list)

Please refer to 「Usage Chapter 3 Tablet-3」 for details.

- | | |
|---------------------------------|---|
| 1) Normal alveolar breath sound | 7) Tachypnea (Consonating rales) |
| 2) Fine crackles | 8) Intensified bronchovesicular sounds |
| 3) Coarse crackles | 9) High pitch rhonchi + fine crackles |
| 4) Low pitched rhonchi | 10) High pitch rhonchi + prolonged exhalation |
| 5) High pitch rhonchi 1 | 11) Tachypnea shallow respiration) |
| 6) High pitch rhonchi 2 | 12) Kussmaul respiration |

3 Pulse Palpation

Pulse can be checked at four places -
carotid arteries, radial arteries.

Pulse rate can be set at 12 levels.

Please refer to 「Usage Chapter 3 Tablet-4」 for details.

4 Auscultation of Heart Sound

Set the Breathing motion OFF.

Please refer to 「Usage Chapter 3 Tablet-2」

for details. Prepare the enclosed stethoscope.

Auscultation is possible at Right Cardiac base,

Left cardiac base, Left sternal edge, Cardiac apex.

Heart rate can be set at 12 levels. (Synchronized to the Pulse rate)

Heart Sound can be set from 20 disease types. (Refer to the below list)

Please refer to 「Usage Chapter 3 Tablet-5」 for details.

- | | |
|---|-------------------------------|
| 1 Normal (no splitting of the second sound) | 11 Mitral stenosis |
| 2 Normal (split second sound) | 12 Mitral insufficiency |
| 3 Abnormal split second sound | 13 Aortic stenosis |
| 4 Increased apical second sound in hypertension | 14 Aortic insufficiency |
| 5 Apical fourth sound | 15 Subaortic stenosis |
| 6 Innocent murmur | 16 Atrial septal defect |
| 7 Aortic ejection sound | 17 Ventricular septal defect |
| 8 Mid-systolic clicks | 18 Pulmonary stenosis |
| 9 Mitral escape clicks / murmur | 19 Acute mitral insufficiency |
| 10 Tricuspid insufficiency | 20 Pulmonary insufficiency |

5 Blood Pressure Measurement

Prepare the enclosed stethoscope.

For details on connecting exclusive sphygmomanometer,
please refer to 「Usage Chapter 1 Set up-8」 .

Blood Pressure can be measured at both arms.

Start measurement. After finishing measurement returning the value of
sphygmomanometer to zero, the result displays on the Bedside Monitor.

The value of Upper and Lower can set at any level. Please refer to 「Usage Chapter3 Tablet-6」
for details

When the blood pressure is off by 4 mmHg or more, refer to the “Blood pressure calibration”
on the next page.

Blood pressure calibration function

If the margin of error is off by 4 mmHg or more when taking the blood pressure, use the blood pressure calibration from the setting section in the tablet memory.

While a special sphygmomanometer is connected, set the cuff pressure to 50 mmHg and 200 mmHg, and then press the buttons for each value.

This setting brings the margin of error within 2 mmHg.



6 ECG

Prepare the enclosed exclusive electrodes.

For details on connecting exclusive electrodes, please refer to 「Usage Chapter 1 Set up-7」. Select menu ECG on the Tablet. (ECG practice is only possible while the ECG menu is being selected.)

Wave can be selected.

Please refer to 「Usage Chapter3 Tablet-7」 for details.

Attach the electrodes in order. The Bedside Monitor will indicate the correct/incorrect attachment.

Wave only displays on the Bedside Monitor when all the electrodes are correctly attached.

7 Pupillary Reflex

Prepare enclosed penlight.

Pupillary reflex can be checked at both pupils.

Reflex pattern can be selected.

Please refer to 「Usage Chapter3 Tablet-8」 for details.

8 Pulse Oximeter

Prepare enclosed exclusive pulse oximeter.

For details on connecting exclusive pulse oximeter, please refer to 「Usage Chapter 1 Set up-8」.

Measurement is possible at both right and left.

SpO₂ value can be set in 3 types.

Please refer to 「Usage Chapter3 Tablet-9」 for details.

Storage Method

- 1 Apply the attached baby powder to the doll before putting it in storage, if the doll becomes sticky. All cables must be inserted into the doll when applying the powder, as it may enter the connector and cause damage.
- 2 The power cable must be pulled out after turn off the switch placed on the back of the mechanical device.
- 3 As shown in the picture below, push the colored parts towards the mechanical device to remove the Blue/Red cord from the connector.
Never try to pull the cable out strongly.



- 4 Remove the main Connection cord and Connection cord for Bedside Monitor.
Loosen the lock first to remove the Exclusive Sphygmomanometer.
Never try to pull the cable out strongly.
- 5 Avoid storing the product in direct sunlight or in locations with a high temperature or humidity.

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