



Caution

Don't mark on the phantom with pen or leave printed materials on its surface.
Ink marks on the phantom will be irremovable.

MW76

11480-000

Automated Birthing Adapter "SAKUYA"

Instruction Manual

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KYOTO KAGAKU

General Information

Product Features and Precautions

Before you start

Thank you for purchasing the MW76 Automated Birthing Adapter “Sakuya”

SAKUYA is an automated birthing adapter designed for use with compatible maternal simulators for perinatal training. The system automatically reproduces the sequence of a normal delivery, including fetal descent, rotation, crowning, external rotation, and delivery.

Compatible maternal simulators: Hana, Vaginal Delivery Assistance Simulator

Note: Not compatible with the MW65 Delivery Simulator Advanced.

Important Notice

Please use this product only for its intended purpose. The manufacturer shall not be liable for any damage or accidents resulting from use other than those described in this instruction manual.

Features

- The timing and conditions of each stage of delivery—from crowning to fetal delivery—can be configured according to the training scenario, including delivery duration and the number of crowning events.
- Mechanical control of fetal descent and rotation enables standardized training.
- The system can be operated without an assistant, allowing instructors to focus on guidance and evaluation.
- In addition to Manual Mode, which allows real-time adjustment of labor progression, Auto Mode enables automatic operation of the entire delivery process based on preset conditions.



Precautions

- | | |
|---|--|
| <ul style="list-style-type: none">● Handle with Care
This product is made from a special composition of resin. Please handle with care, ensure not drop it, and avoid shock as to not damage it | <ul style="list-style-type: none">● Cleaning and Care
Wipe the product with water or mild detergent.
Never wipe the product with thinner or organic solvent. |
| <ul style="list-style-type: none">● Do not leave printed materials on the product
Do not leave printed materials in contact with the surface of the product. Ink may be absorbed and stains will be irremovable. | <ul style="list-style-type: none">● Do not write on the product
Any ink on the product will be absorbed and become irremovable. |
| <ul style="list-style-type: none">● Avoid high temperature and humidity
Keep the product at room temperature, away from heat, moisture and direct sunlight. | <ul style="list-style-type: none">● Color change may occur
The color of the product may change over time. This does however not impact the performance. |
| <ul style="list-style-type: none">● Keep away from fire.
Heat may cause deformation, deterioration, or fire. | <ul style="list-style-type: none">● Do not disassemble or modify the product.
Improper handling may result in malfunction or damage. |



Precautions

Use only the supplied AC adapter.

Using other adapters may cause fire or product malfunction. Do not forcibly bend, twist, or damage the power cord.

Do not bend, twist, or damage the power cord.
Damage to the cord may result in fire or electric shock.

Unplug the power cord when not in use.

Failure to do so may result in electric shock, leakage, or fire due to overheating or insulation deterioration.

Do not plug or unplug the power plug with wet hands.

This may cause electric shock.

When unplugging the power cord, hold the plug firmly.

Do not pull on the cord, as this may damage the plug or cable and cause fire or electric shock.

If abnormal odor or smoke is detected, immediately turn off the power and unplug the unit.

In such cases, promptly contact your distributor or Kyoto Kagaku Co., Ltd.

Use During Training

This product is capable of automatically reproducing the sequence of a normal delivery for training purposes. However, operating the device without providing appropriate delivery assistance may cause malfunction or damage.

When using the device, be sure to perform delivery assistance in accordance with the instructions in Section P.31.

Before Use

Set Includes

Set Includes

Before your first use, ensure all components listed below are included in the unit.

a. Abdominal unit	1	d. Fetal Model	1
b. Control Box	1	e. AC Adapter	1
c. Rotation Unit	1	f. Lubricants	1



a. Abdominal unit
This unit is attached to the abdomen of the maternal models (Hana and the Delivery Assistance Model).



b. Control Box
Controls the operation of the abdominal unit.



Before Use

Set Includes

Set Includes



c. Rotation Unit
(attaches to the abdominal unit)



d. Fetal Model

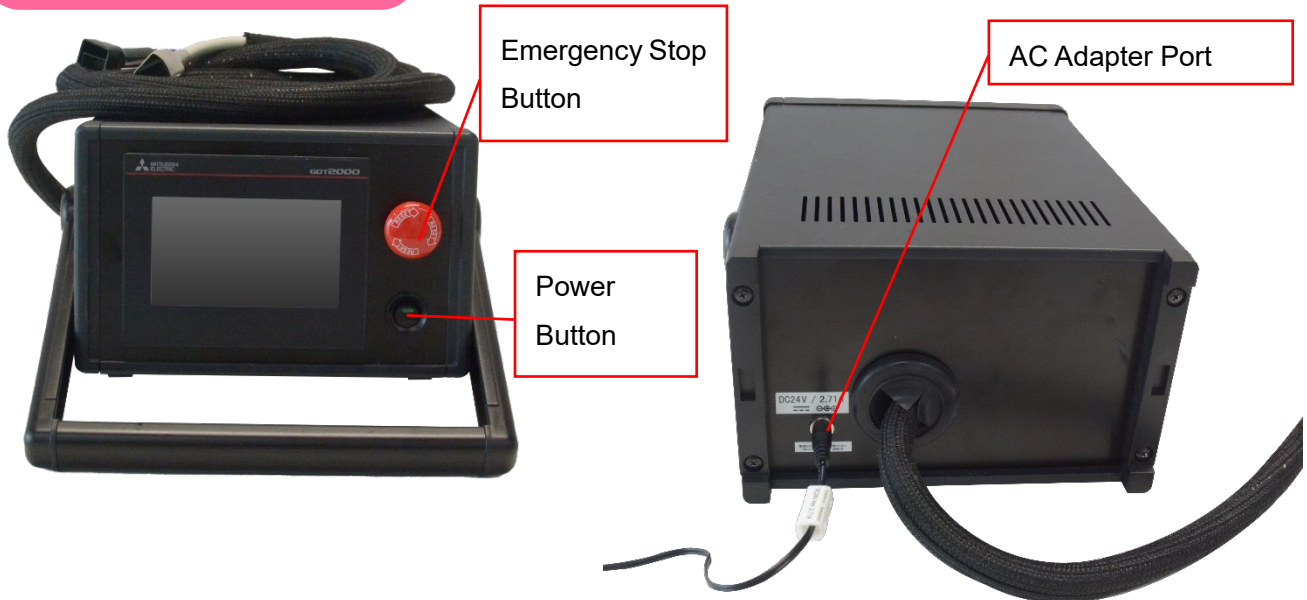


e. AC Adapter



f. Lubricants

Operation



Emergency Stop Button :

Stops the motor immediately.

When pressed, the screen shown on the right appears.

To release, rotate the button clockwise.

Press the OK button to close the screen.

Power Button : Turns the power ON/OFF.

The LED indicator lights when the power is ON.



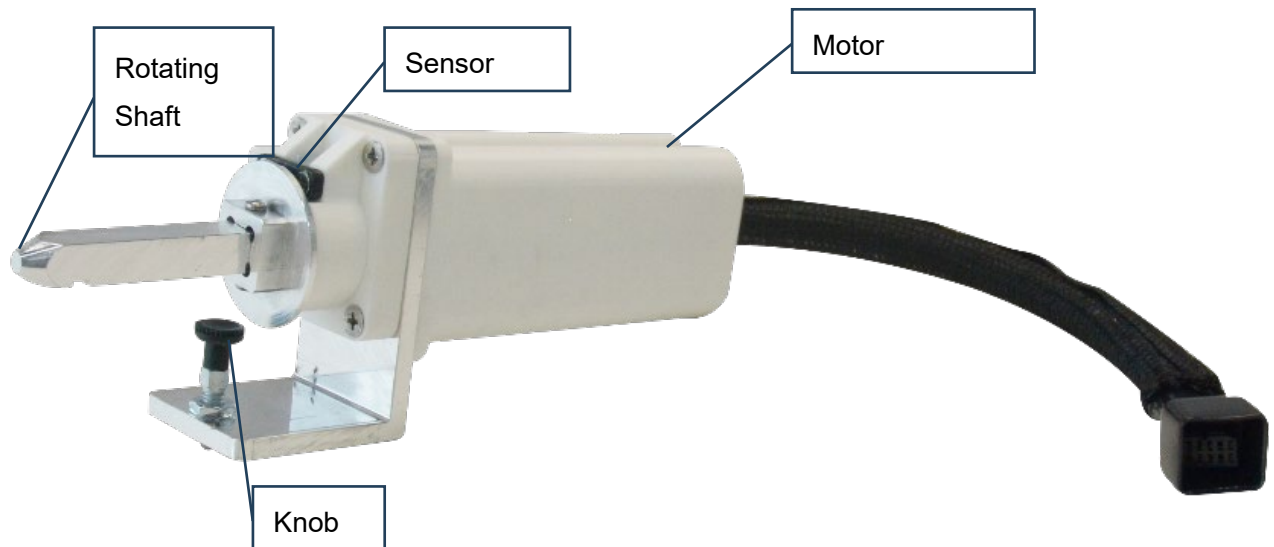
In the following situations, immediately press the Emergency Stop button to stop the motor:

- When the automatic delivery system is accidentally operated while a hand is inside the maternal model.
- When a reset operation is performed while the fetal model is installed (e.g., when the fetus is in a delivered state).
- When the fetal model does not move due to friction caused by insufficient lubricant, resulting in excessive load.
- When system operation may pose a risk of injury or cause damage to the automatic delivery system or models.

Before Use

Parts and Buttons / Operation

Names of parts



Rotation Unit



Abdominal unit

Preparation for Training

Preparing the Control BOX

Preparing the Control BOX

The control box stand position is adjustable.

Press the circular areas shown in the image on both sides at the same time.

Slightly lift the control box while pressing to make adjustment easier.



Adjust the stand position while pressing both sides inward.

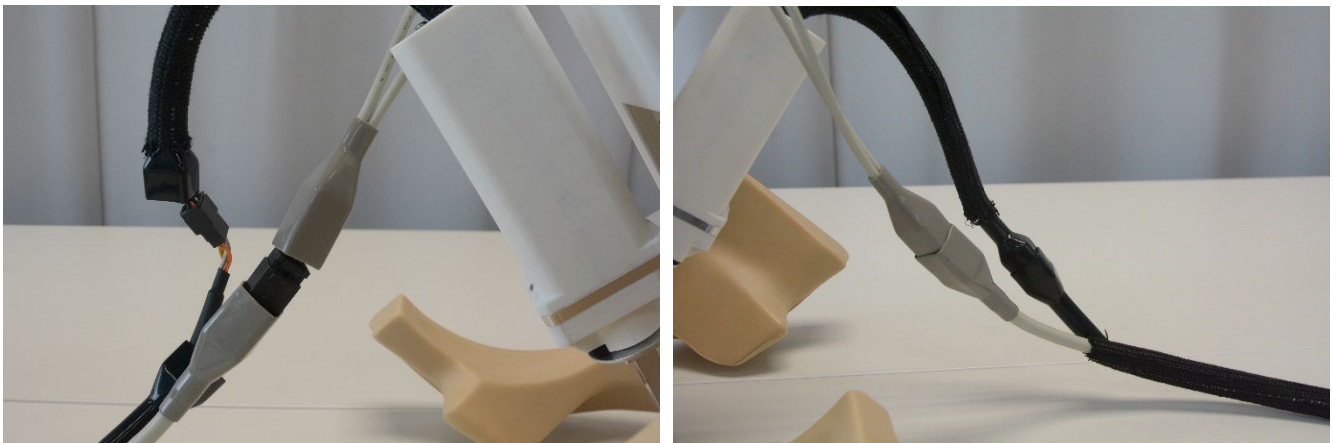
Release the circular areas and move the stand until it clicks into place.

The stand can be locked in multiple positions.

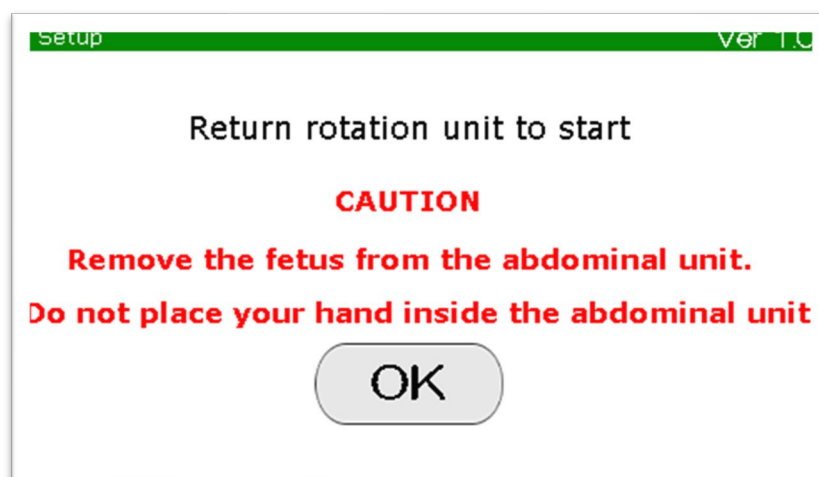


Preparing the Control BOX

1. Ensure that the power button on the control box is OFF.
2. Connect the two cables extending from the rotation unit and the abdominal unit to the corresponding two cables on the control box, then attach the waterproof covers.
3. Plug the power cord into an outlet, and connect the AC adapter cable to the control box.



4. Press the power button on the control box. The power indicator lights when the unit is turned ON.
5. After startup, the screen shown below appears. Ensure that the fetal model is removed from the rotation unit, then press the OK button. The system will automatically begin resetting to the initial position.



※Do not touch while the unit is operating.

Preparation for Training

Attaching to the maternal model

Hana, Vaginal Delivery Assistance Simulator

When attaching this unit to Hana, or the Delivery Assistance Simulator, prepare the model body as shown in the photos below.

For Hana, the Delivery Assistance Training Set is required.

Hana



Remove the abdomen before use.

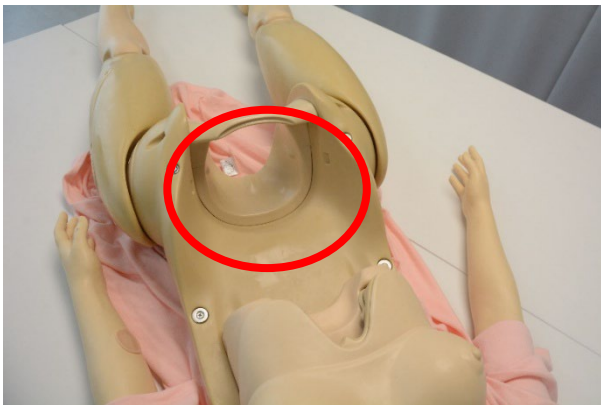
Vaginal Delivery Assistance Simulator



Remove the abdomen before use.

Attaching to the model

1. Apply sufficient lubricant to the inner abdomen of the maternal model and to both the inner and outer vulvar areas. (Refer to the circled areas below for the application points.)



Lubricant may be applied to the vulvar area while it is attached to the model.

2. Install the vulvar unit.



If lubricant has been applied to the vulvar unit while it is attached to the model, proceed to Step 3.

Attaching to the Maternal model (Hana)

3. Attach the abdominal unit to Hana.
(Refer to the photos below for the installation location.)



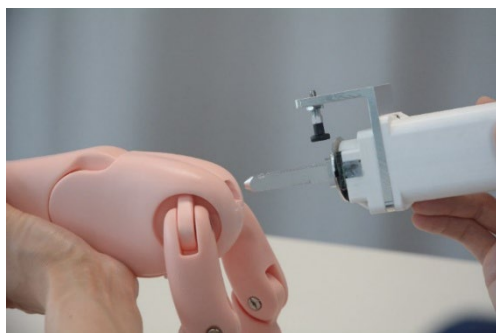
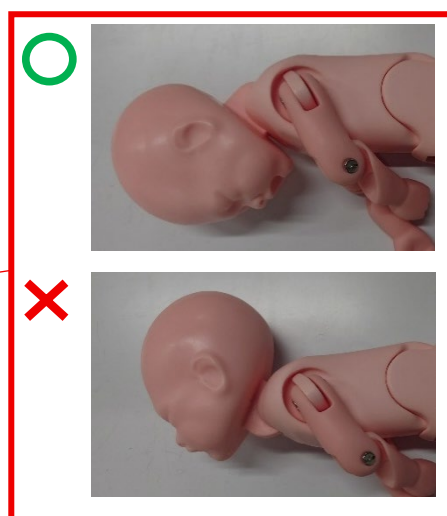
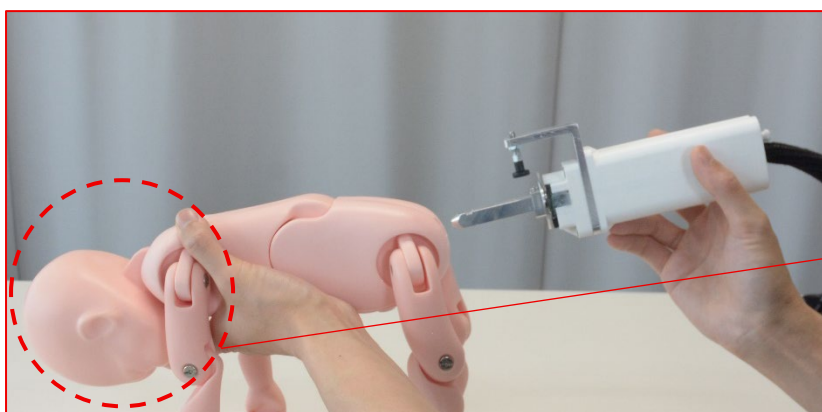
Applying Lubricant to the Fetal Model

4. Before training, ensure that sufficient lubricant is applied to the fetal model, placenta, vulvar unit, and the inner abdomen of the maternal model. Apply approximately 20 pumps of lubricant to the entire fetal model, placenta, and amniotic membrane.



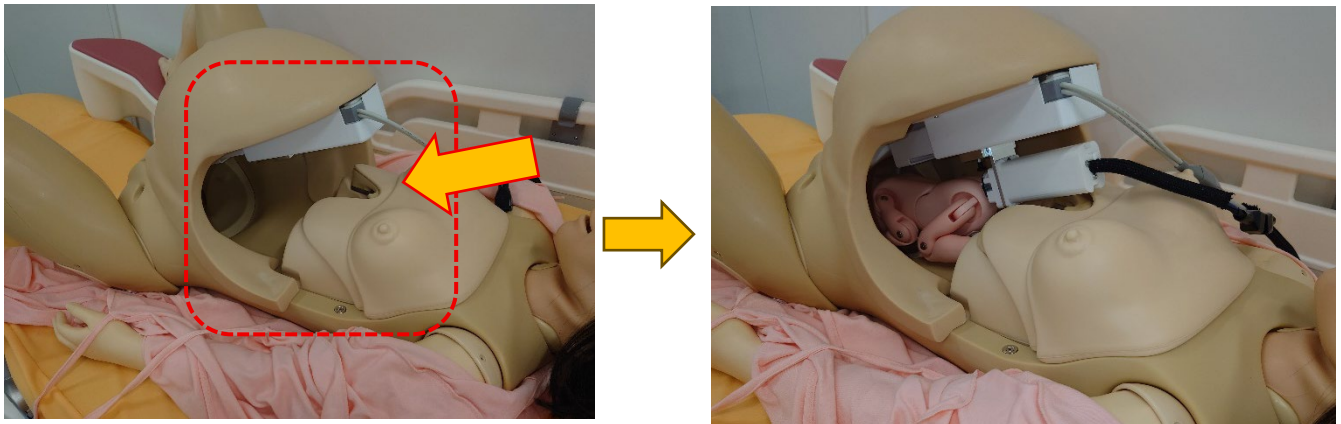
Fetal Model Setup

5. Insert the rotation unit fully into the opening of the fetal model, following the orientation shown in the photo. (The photo shows the unit removed from the body.) Ensure that the fetal chin is tucked during installation.

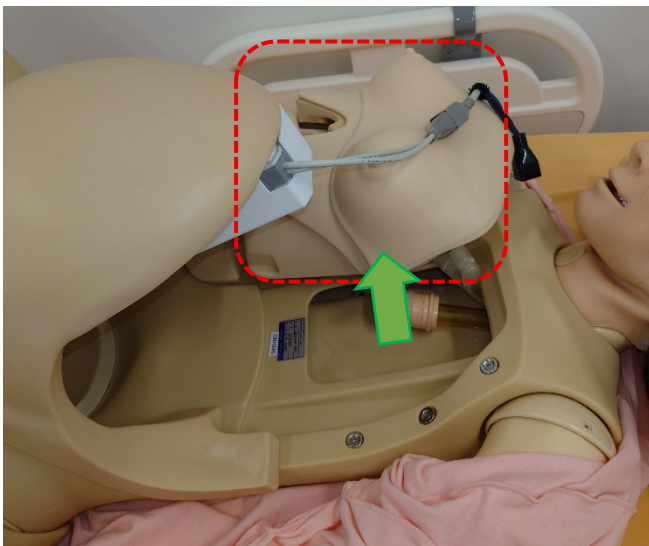


Attaching to the Abdominal unit — Installation Location on the

6. Insert and attach the rotation unit, with the fetal model in place, to the abdominal unit through the opening marked with a square.



If installation is difficult, temporarily shift the chest section to make attachment easier.



Attaching to the Abdominal unit — Installation Location on the Model

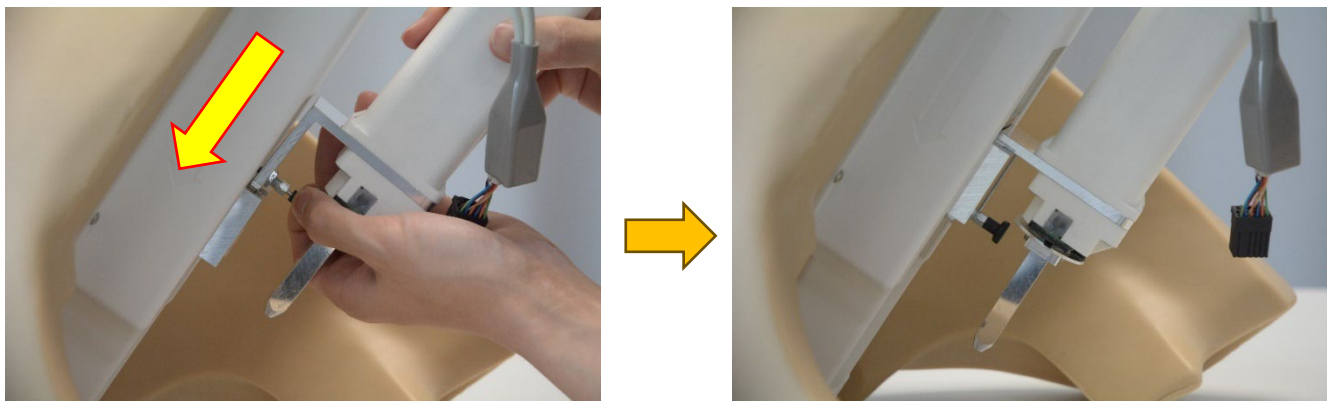
7. Attach the rotation unit to the abdominal unit.

Pull the knob downward as shown in the photo.

While holding it, slide it in the direction of the arrow until it clicks into place.

The rotation unit will be securely locked.

*For how to confirm that the rotation unit is locked, refer to “How to Check the Lock Status of the Rotation Unit” at P.15.

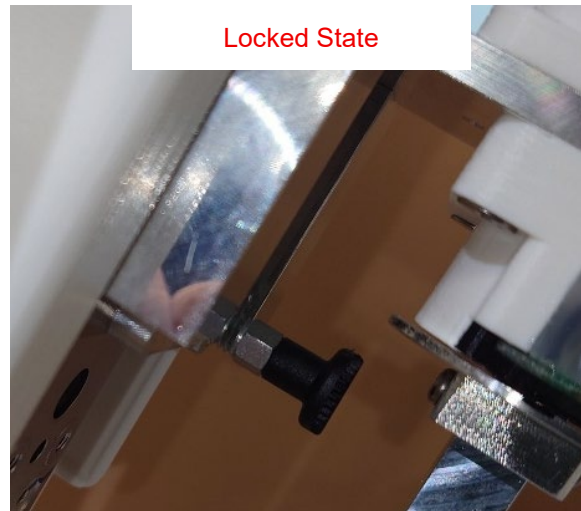
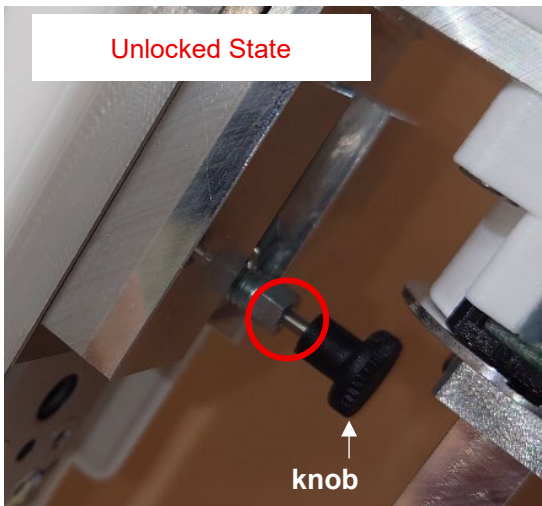


*For demonstration purposes, the fetal model is not attached here.

Preparation for Training

Attaching to the Maternal model ~ Hana ~

How to Check the Lock Status of the Rotation



***When unlocked, a gap is visible in the circled area.**

Removing the Rotation Unit

To remove the rotation unit from the abdominal unit, follow the reverse procedure.

Pull the knob and slide it in the direction of the arrow to release and remove the rotation unit.

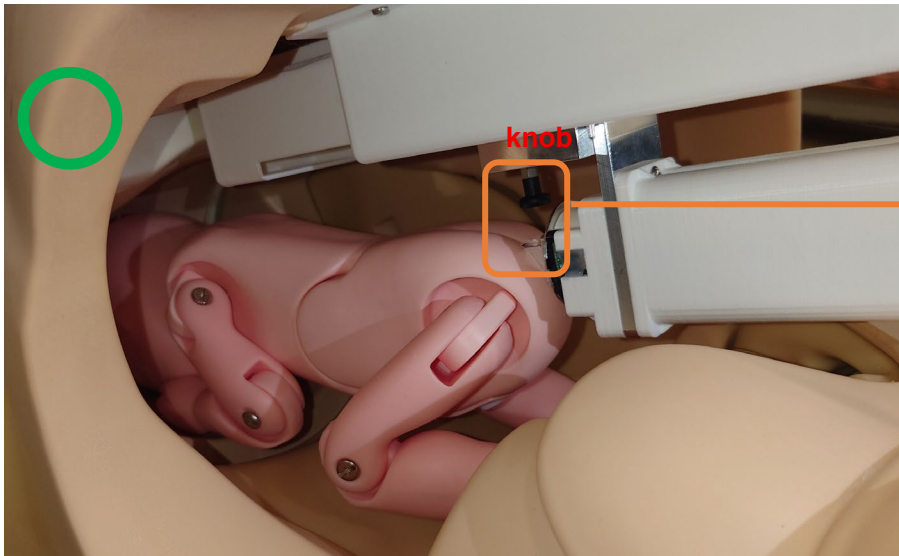


***For demonstration purposes, the fetal model is not attached here.**

Precautions for Automatic Delivery

If the fetal model is not set correctly when starting automatic delivery, the system may not operate properly.

The correct setup should match the display on the control box.



If the knob is not functioning properly,
a gap will appear in the boxed area.

The following fetal model setups may result in improper operation:

Example: Installed upside down



**Example: Arms or legs
are entangled**



**Example: The fetal chin is
raised**



Attaching to the model

1. Apply sufficient lubricant to the inner abdomen of the maternal model and to both the inner and outer vulvar areas. (Refer to the circled areas below for the application points.)



Lubricant may be applied to the vulvar area while it is attached to the model.

2. Install the vulvar unit.



If lubricant has been applied to the vulvar unit while it is attached to the model, proceed to Step 3.

Preparation for Training

Attaching to the Maternal model ~ Vaginal Delivery Assistance Simulator ~

Attaching to the Maternal model

3. Attach the abdominal unit to Vaginal Delivery Assistance Simulator.
(Refer to the photos below for the installation location.)



Applying Lubricant to the Fetal Model

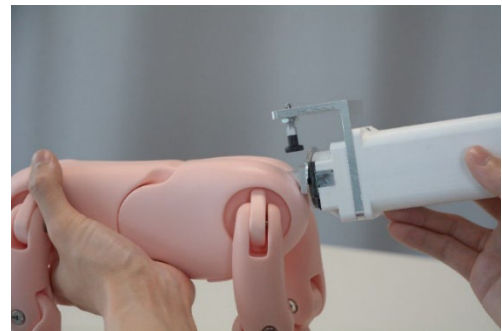
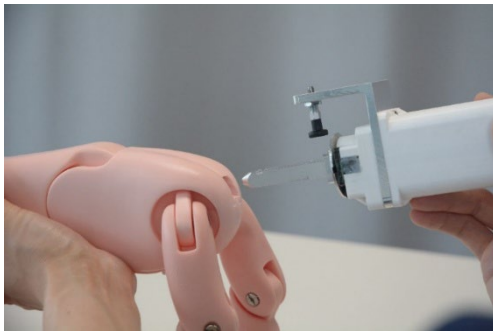
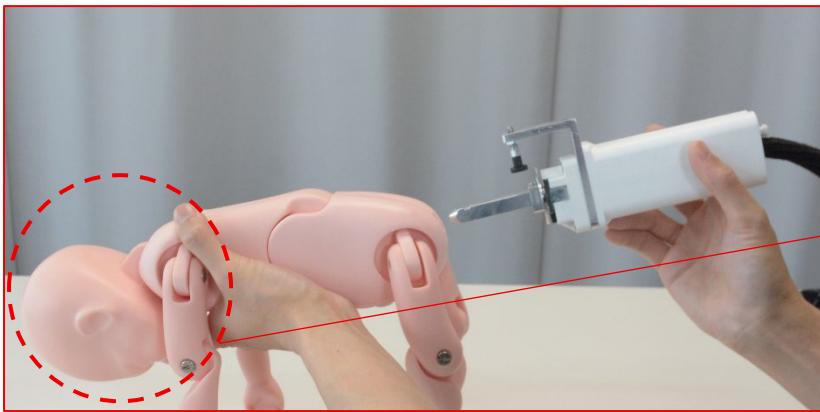
4. Before training, ensure that sufficient lubricant is applied to the fetal model, placenta, vulvar unit, and the inner abdomen of the maternal model. Apply approximately 20 pumps of lubricant to the entire fetal model, placenta, and amniotic membrane.



Fetal Model Setup

5. Insert the rotation unit fully into the opening of the fetal model, following the orientation shown in the photo. (The photo shows the unit removed from the body.)

Ensure that the fetal chin is tucked during installation.

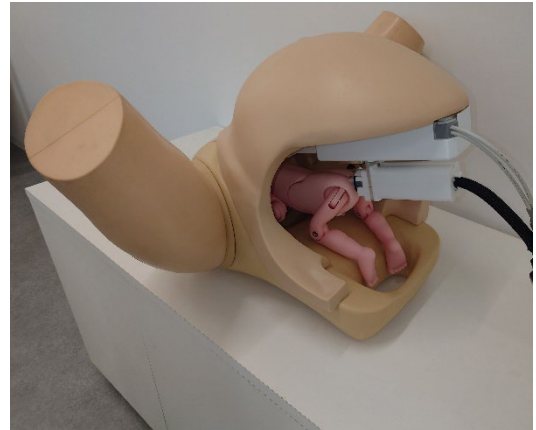
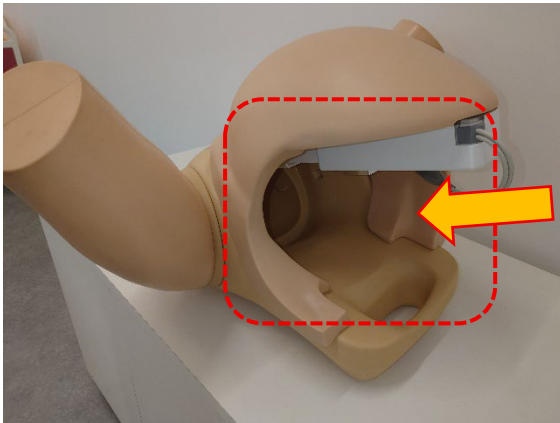


Preparation for Training

Attaching to the Maternal model ~ Vaginal Delivery Assistance Simulator ~

Attaching to the Abdominal unit — Installation Location on the Model

6. Insert and attach the rotation unit, with the fetal model in place, to the abdominal unit through the opening marked with a square.



Attaching to the Abdominal unit — Installation Location on the Model

7. Attach the rotation unit to the abdominal unit.

Pull the knob downward as shown in the photo.

While holding it, slide it in the direction of the arrow until it clicks into place.

The rotation unit will be securely locked.

*For how to confirm that the rotation unit is locked, refer to “How to Check the Lock Status of the Rotation Unit.”



*For demonstration purposes, the fetal model is not attached here.

Preparation for Training

Attaching to the Maternal model ~ Vaginal Delivery Assistance Simulator ~

Removing the Rotation Unit

To remove the rotation unit from the abdominal unit, follow the reverse procedure.

Pull the knob and slide it in the direction of the arrow to release and remove the rotation unit.



*For demonstration purposes, the fetal model is not attached here.

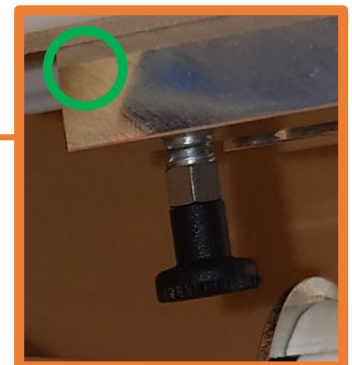
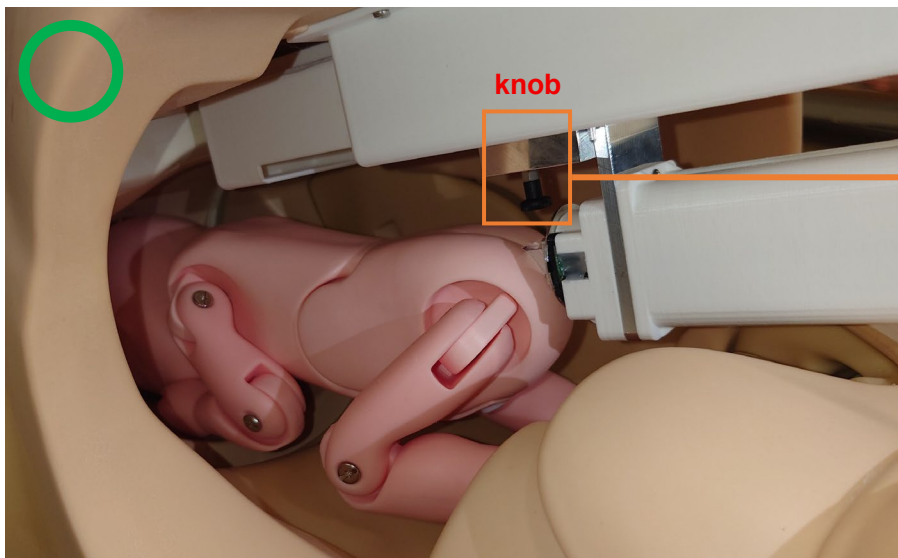
Preparation for Training

Attaching to the Maternal model ~ Vaginal Delivery Assistance Simulator ~

Precautions for Automatic Delivery

If the fetal model is not set correctly when starting automatic delivery, the system may not operate properly.

The correct setup should match the display on the control box.



If the knob is not functioning properly,
a gap will appear in the boxed area.

The following fetal model setups may result in improper operation:

Example: Installed upside down



**Example: Arms or legs
are entangled**

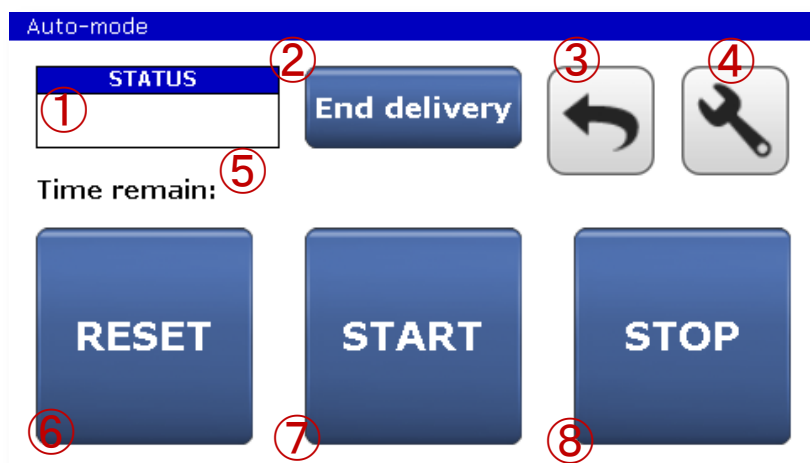


**Example: The fetal chin is
raised**



Auto Mode

This mode automatically performs the entire delivery process from start to completion, including fetal delivery.



- ① **Status** : Displays the current operation.
(Ready、Descending、Resetting、Resetting、Pausing)
- ② **End delivery** : Skips intermediate steps and performs the external rotation.
- ③ **Back Button**: Returns to the previous screen.
- ④ **Settings Button**: Opens the settings screen.
- ⑤ **Time remaining** : Displays the remaining time until delivery is complete.
- ⑥ **RESET Button**: Returns the system to the initial position.
- ⑦ **START Button**: Starts automatic delivery.
- ⑧ **STOP Button**: Pauses the operation.

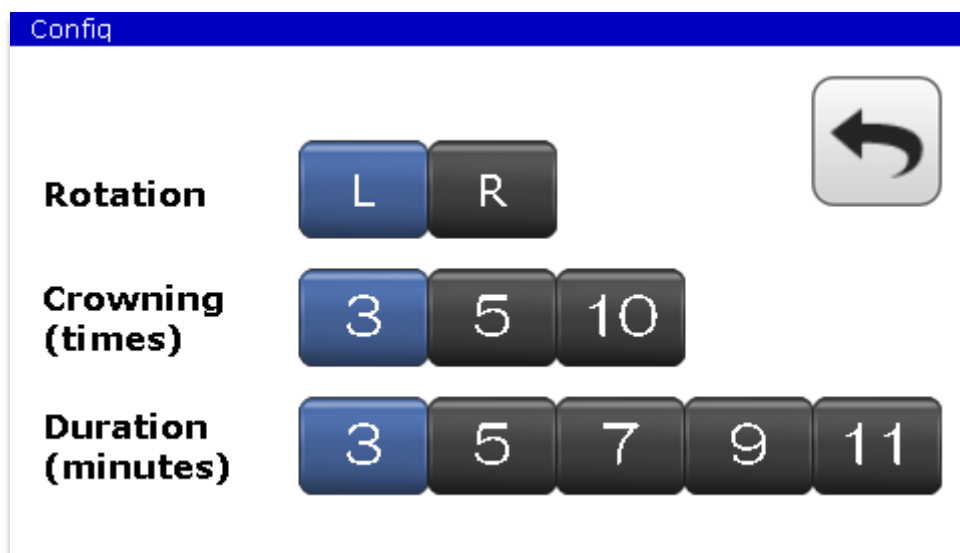
Auto Mode

Pressing the Settings button displays the screen shown below.

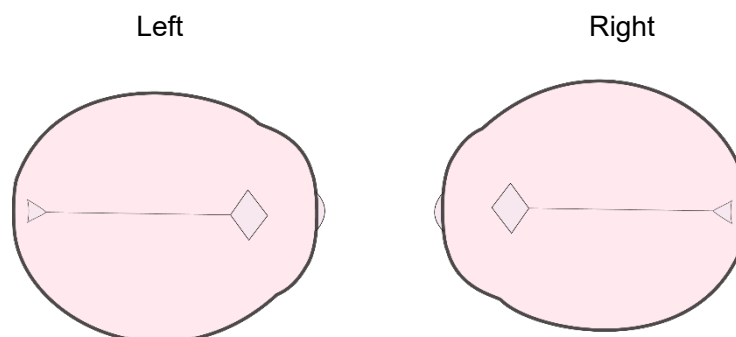
You can configure the rotation direction (the direction the fetal face is oriented during the external rotation, as viewed from the operator's side), the number of crowning events, and the delivery duration.

After selecting the desired settings, press the Back Button and start the delivery.

The system will operate according to the configured settings.



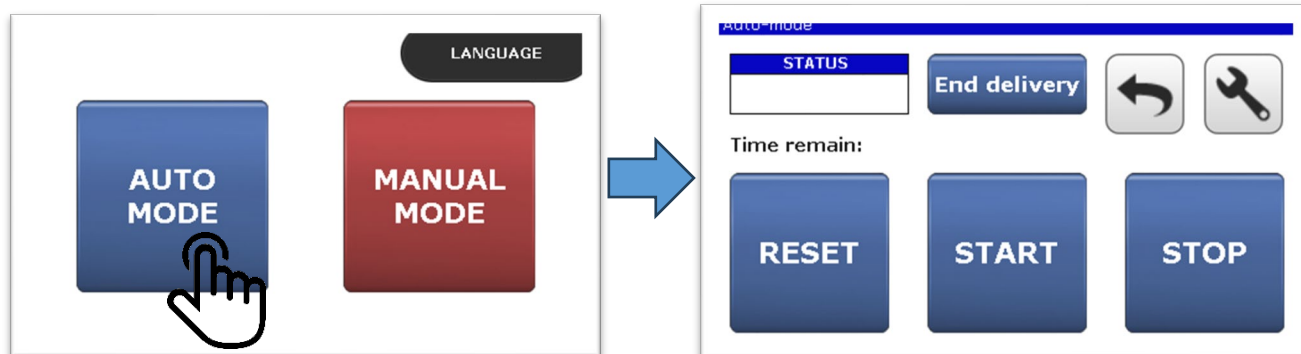
External rotation direction (operator's view)



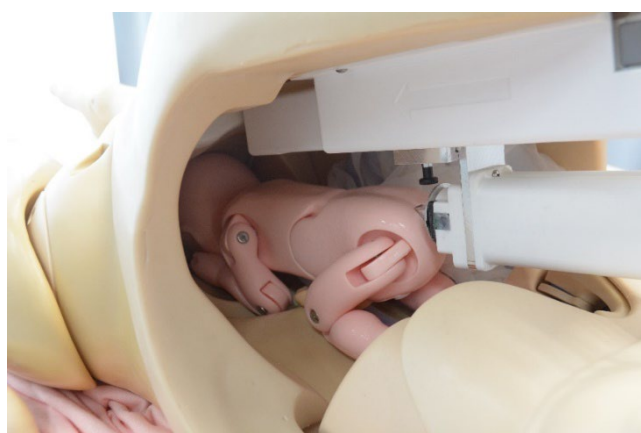
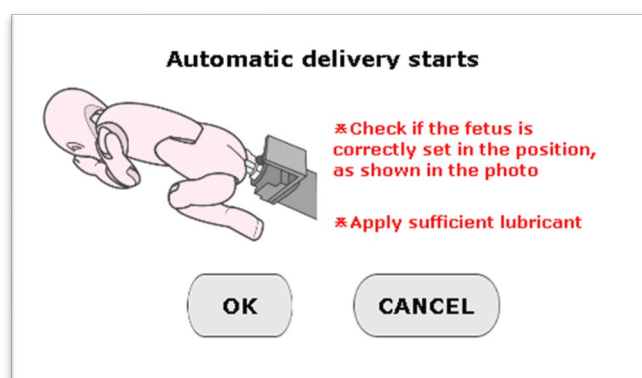
Auto Mode

- ① After the control box starts up and the reset to the initial position is complete, the mode selection screen appears.

Select **Auto Mode** to display the screen shown below.



- ② Press the START button to begin automatic delivery.
- ③ After confirming that the fetus is correctly positioned and sufficient lubricant has been applied, press the OK button. Press the CANCEL button to return to the previous screen.

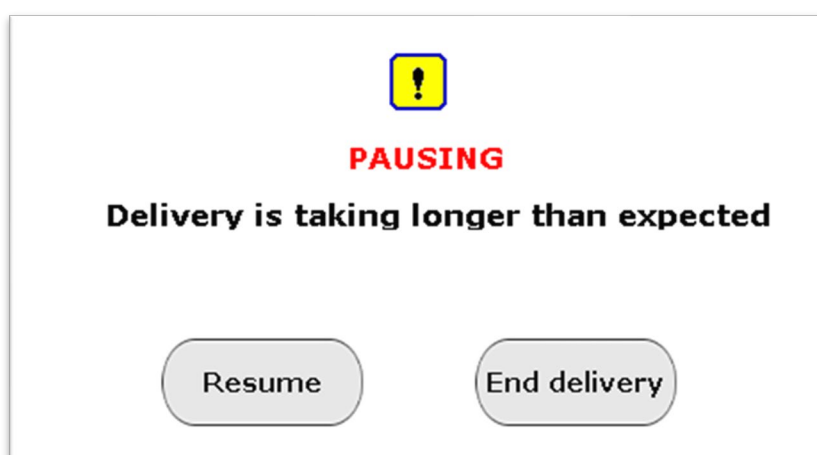


Auto Mode

When the delivery is completed successfully, the following screen will be displayed.
Remove the fetus and press the OK button.



If the delivery takes longer than expected, the following screen appears.
If you press the Resume button, the delivery resumes from the point where it was paused.
If you press the End Delivery button, the delivery will end. Remove the fetus.

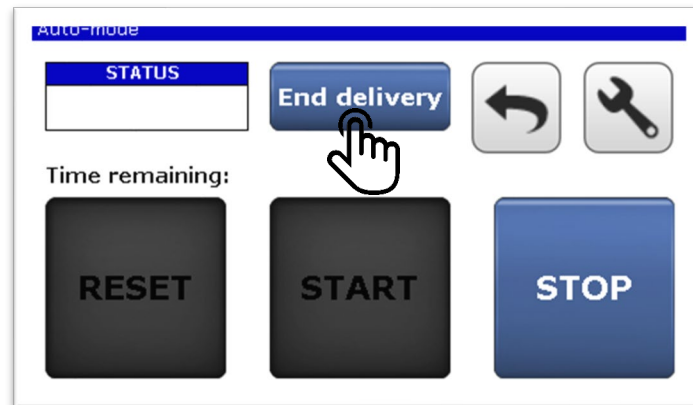


The above alarm may appear if sufficient lubricant has not been applied or if the posture of the fetal model is not correct. (See p.12)

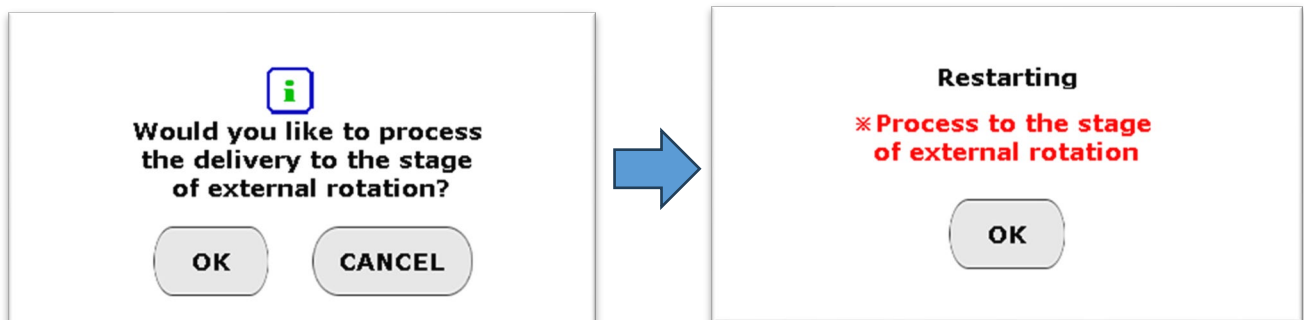
Auto Mode

【To Proceed to the External Rotation】

The following screen appears during delivery.



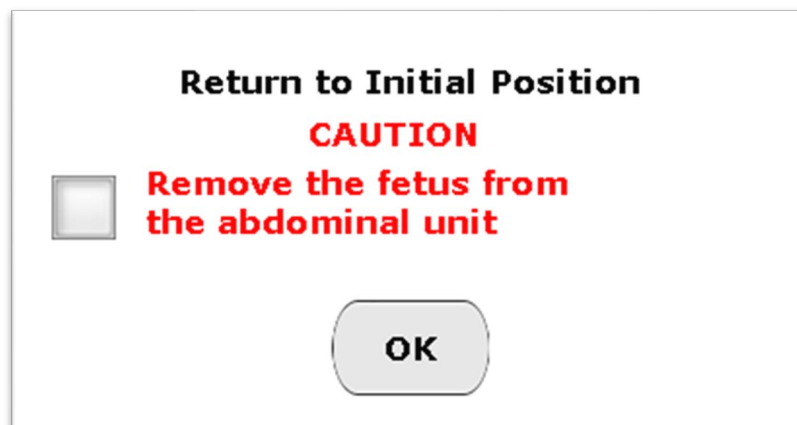
If you press the End Delivery button, the process proceeds as shown in the screen below and transitions to the External rotation. Prepare for delivery and press the button.



If you press the STOP button, automatic delivery stops. To resume, press the START button.

If you want to restart from the beginning, press the RESET button.

Be sure to remove the fetal model before resetting it to the initial position.

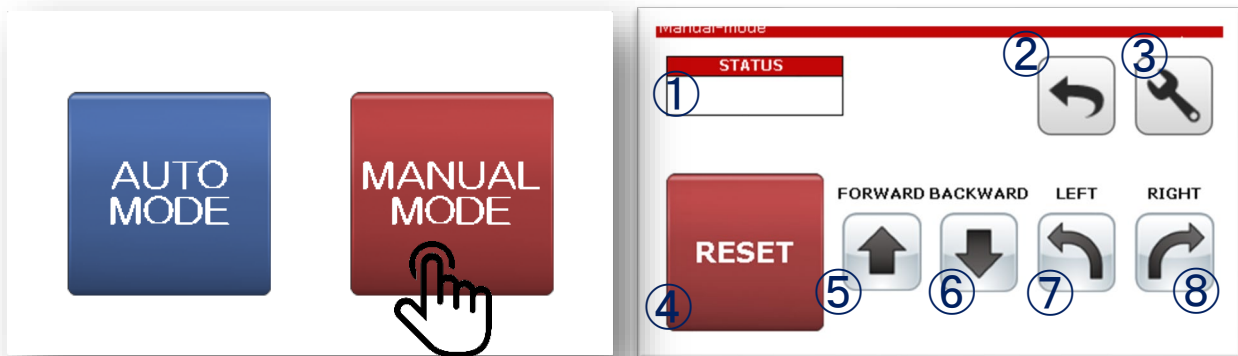


Preparation for Training

Operating the Control Box

Manual-Mode

This mode allows manual control of the fetal model's forward/backward movement and left/right rotation. In addition, the rotation speed for left and right rotation can be adjusted step by step from the settings screen.



- ① **Status:** Displays the current operation status.
(Ready, Resetting, Moving Forward, Moving Backward, Rotating Right, Rotating Left)
- ② **Back Button:** Returns to the previous page.
- ③ **Settings Button:** Opens the settings screen.
- ④ **RESET Button:** Returns the rotation unit to the initial position.
- ⑤ **Forward Button:** The fetus moves forward while the button is pressed.
(Approximately 100 mm from the initial position)
- ⑥ **Backward Button:** The fetus moves backward while the button is pressed.
- ⑦ **Left Button:** The fetus rotates left while the button is pressed.
- ⑧ **Right Button:** The fetus rotates right while the button is pressed.
(*Rotation direction is viewed from the operator's side.)

The right and left rotations cannot exceed 90 degrees from the initial position.

In addition, forward and backward movement cannot exceed the preset range.

When any operation reaches its limit, one of the following messages appears in the status area on the operation screen:

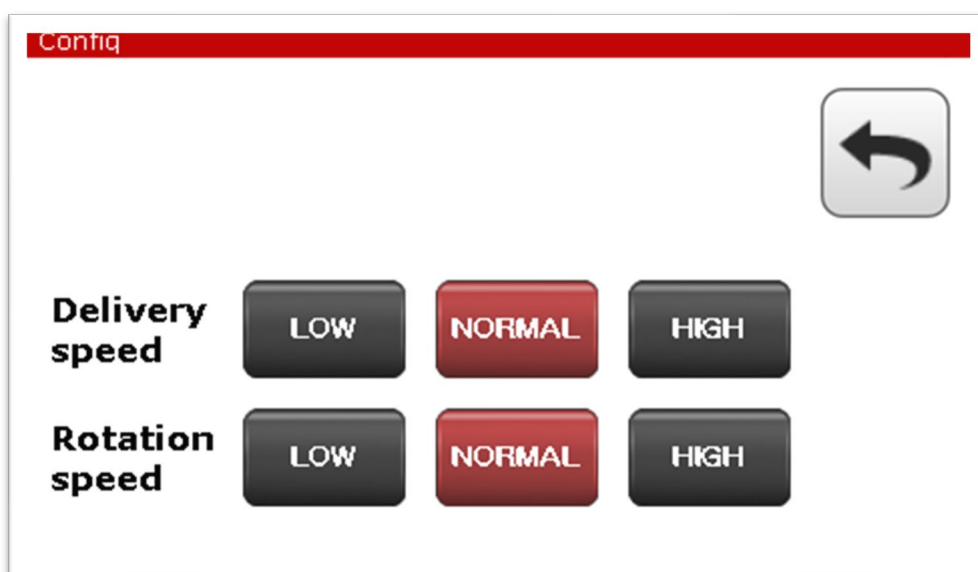
"Right Rotation Limit," "Left Rotation Limit," "Forward Limit," or "Backward Limit."

Manual I-Mode

When you press the Settings button, the following screen appears.

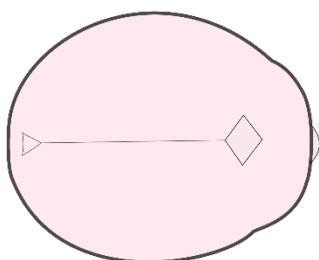
You can configure the delivery speed and rotation speed.

After selecting the desired settings, press the Back Button and then press an operation button to operate the unit with the selected settings.

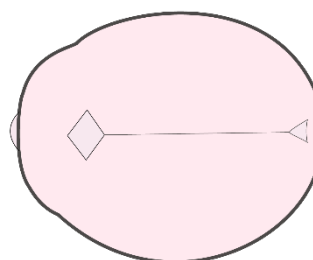


External rotation direction (operator's view)

Left



Right



Manual –Mode

If excessive load is applied to the rotation unit, for example when the fetal model becomes stuck, the following screen will be displayed.

Check the posture of the fetal model and make sure that sufficient lubricant has been applied.



When the Resume button is pressed, all operation buttons will become active again.

If the fetal head has been completely delivered from the vulva, remove the fetal model.

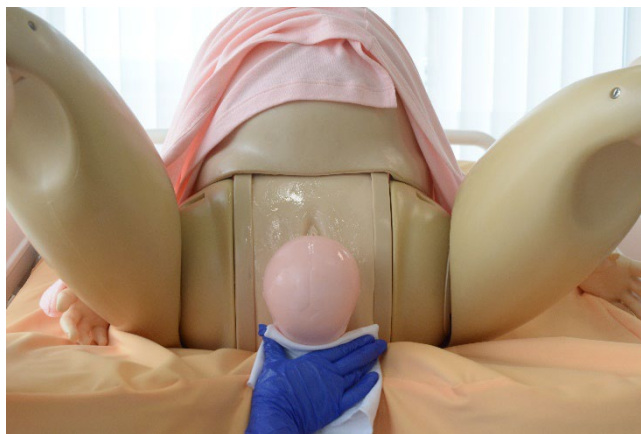
After that, press the RESET button to return the motor to its initial position.

Training

- ① Perform the delivery safely while providing perineal support.

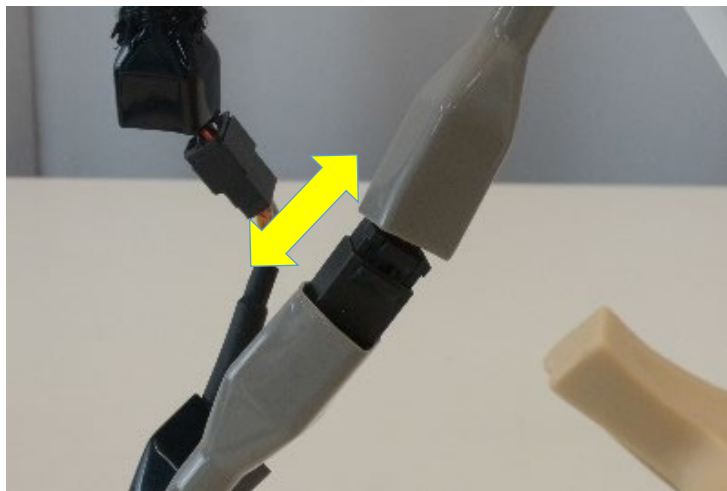


- ② Once external rotation is completed, proceed with delivery.



- ① Press the power button on the control box to turn the power OFF.
- ② After confirming that the LED lamp has turned off, unplug the power plug from the outlet.

Then disconnect the connector connected to the cable on the abdominal unit side. Press the protruding part on the top of the connector while pulling it in the direction of the arrow to disconnect it.



※Do not pull the connector forcibly when disconnecting it. Pulling it forcibly may cause wire breakage. Do not touch the cable or connector with wet hands.

- ③ Pull the knob and slide it in the opposite direction from insertion to remove the rotation unit.

Wipe off any lubricant attached to the fetal model, umbilical cord, amniotic membrane, vulvar unit, and maternal model using wet wipes or a similar material. They may also be rinsed with water. After cleaning, dry them thoroughly before storage.

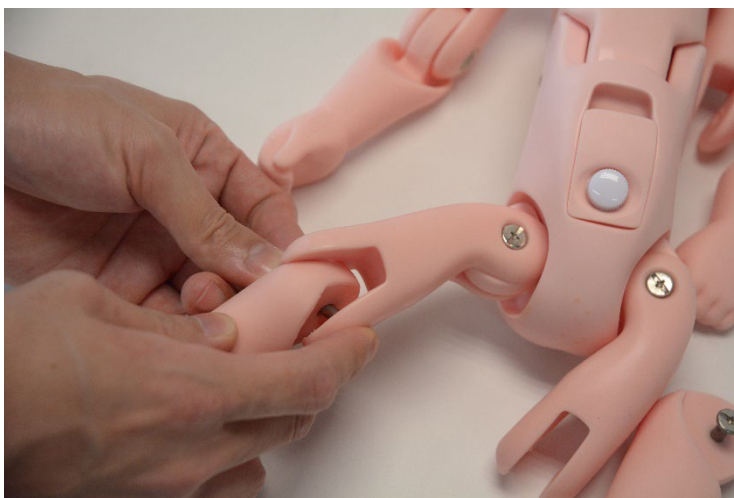
Never wash the abdominal unit or rotation unit with water.

Troubleshooting

Symptom	Possible Cause	Recommended Procedure
The control box does not turn on.	The AC adapter cable is disconnected or not connected properly.	Check the connections of the AC adapter, power outlet, and each connector on the control box. (P. 5)
	The specified AC adapter is not being used.	Use the supplied AC adapter. (P. 5)
The screen does not advance.	The emergency stop button is pressed.	Release the emergency stop button. (P. 5)
	A connector is disconnected.	Connect the connector between the control box and the abdominal unit. (P. 8)
The START button cannot be pressed in Auto mode.	The motor has not returned to the initial position. (Reset has not been performed.)	Remove the fetal model and press the RESET button. (P. 23)
The motor does not operate.	A connector is disconnected.	Connect the cable connector between the control box and the abdominal unit. (P. 8)
	Friction has occurred due to insufficient lubricant.	Apply sufficient lubricant. (P. 10, P. 11, P. 17, P. 18)
Rotation does not stop.	Reset operation is in progress.	Press the emergency stop button, remove the fetal model, and then press the RESET button again. (P. 5)
	Sensor reading error.	Press the emergency stop button, remove the fetal model, and then press the RESET button again. (P. 5) <u>If the problem persists, contact us.</u>
The system is operating abnormally.	Unexpected error.	Press the power button to restart the system. (P. 5)
White residue is visible on the model.	Deposits caused by remaining lubricant that was not wiped off.	Wipe off the lubricant thoroughly before storage. (P. 32)
Parts of the fetal model have come off.	Friction has occurred due to insufficient lubricant.	Reattach the detached parts. For installation instructions, refer to P. 34.
“Pause and press the emergency stop button.” is displayed. (Alarm sounds.)	Friction has occurred due to insufficient lubricant. The fetal model is in an unexpected position.	Apply sufficient lubricant. Position the fetal model with the head lowered.

Fetal Parts Installation

If the fetal arms or legs become detached, reattach them by following the procedure below.





code	Item name	code	Item name
11415-030	1 Genitalia unit	11416-020	1 Placenta
11415-040	1 Lubricants 500mL	11416-030	10 umbilical cords for omphalotomy
11416-040	5 velamen sheets	11458-010	1 fetus



11415-030



11415-040



11416-040



11416-020



11416-030



11458-010

2026. 05

■ USA, Canada, and South America



WEB • www.kkamerica-inc.com

E-MAIL • info@kkamerica-inc.com

TEL : 1-310-325-8860 FAX : 1-310-325-8867

3109 Lomita Boulevard, Torrance, CA 90505-5108, USA

■ Europe, Russia & Africa

Kyoto Kagaku Europe GmbH.

TEL : +49-69-5060-28160

De-Saint-Exupery-Str.10,60549 Frankfurt, Germany

■ Worldwide Inquiries and Orders



URL: <http://www.kyotokagaku.com> e-mail: rw-kyoto@kyotokagaku.co.jp

TEL : +81-75-605-2510 FAX : +81-75-605-2519

15 Kitanekecho, Fushimi-ku, Kyoto, 612-8388, JAPAN

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