

Neonatal Vital Signs Simulator II

LM-098

Instruction Manual

Thank you for purchasing the LM-098 Neonatal Vital Signs Simulator II.
Please read this instruction manual carefully to ensure correct use of the product,
and store it in a safe place for easy access.

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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 simulator is made with special silicone rubber to simulate the texture of human skin, so we recommend that it be handled carefully in the same manner as an actual infant.
2. Refrain from pressing or pulling the simulator with excessive force to prevent dents and deformities. The simulator is also susceptible to damage from sharp instruments or fingernails.
3. This simulator cannot be used for bathing practice. Do not attempt to bathe the simulator or place it in water under any circumstances. In addition, do not put water or tubing into the simulator, as doing so may cause it to malfunction.
4. Be careful not to bend, twist or step on the connecting cord or power supply cord in order to prevent disconnection.
5. Be careful not to drop the simulator and the control box or subject them to strong impacts, as doing so may cause malfunction of the simulator.
6. Do not use oil-based inks or dyes on the simulator, as they may cause permanent staining.
7. Do not place objects on the simulator and do not place it face-down, as doing so may change the shape of the simulator.
8. Do not attempt to open the Magictape™ on the simulator's back or remove the contents, as doing so may cause malfunction of the simulator.
9. Only use the AC adapter and AC cord provided with the simulator.
If necessary, prepare an appropriate plug adapter according to the wall sockets in your country.
10. This product is intended for use in standard operating environments. Do not use it in heavy industrial settings.



Handling and Safety Precautions

These precautions should be strictly observed in order to ensure safe, long-term use of the product.

Caring for the simulator after use

1. To clean the simulator's skin, wipe with a clean piece of gauze soaked in water or a mild detergent diluted with water. Do not use thinners, benzene or similar solvents, as they may cause damage to the simulator.
2. When not in use, store the simulator in the carrying case away from direct sunlight or 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.

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1. Description & features

Description

With this LM-098 simulator, infant vital signs can be measured and the entire body can be monitored. A crying-sound function reproduces the clinical setting more realistically, while heart and breathing sounds can be checked, enabling hands-on training of measurement and monitoring close to those of the actual clinical site.

Features

Control box

Heart and respiratory rates

- Heart rate and respiratory rate are displayed digitally over a normal range, and the status of the infant can be easily set by turning a rotary dial.

Heart sounds and breathing sounds

- An external speaker provided on the control box make these sounds audible in the nearby environment.
- The sounds can be set independently, so the balance can be adjusted to match the status settings.
- Highly realistic sounds are produced with clear sound quality.

Crying-sound function

- Four different crying patterns can be reproduced.
- Four buttons are provided to enable direct operation.

* The LM-098's four crying sound buttons are intended to simulate the following meanings:

1) hungry; 2) sleepy; 3) "hold me"; 4) comfortable.

Please note, however, that crying sounds differ among infants and the crying sounds produced by the LM-098 are intended solely as a reference.

Neonatal simulator

Full-body monitoring

- Silicone rubber is used to produce an extremely realistic texture.
- Monitoring of the head area (palpation of skull molding) includes locating the anterior fontanel, posterior fontanel, sagittal suture, and coronal suture.
- A rectal thermometer can be inserted.

Auscultation

- Vital sign measurement includes auscultation of heart and breathing sounds.

Visual inspection

- Thoracoabdominal breathing synchronized to the set respiratory rate can be observed visually.

Crying-sound function

- The sound of crying can be heard coming from the mouth.

2. Components and Configuration

View of simulator components



1. Neonatal Simulator (with connecting cord)

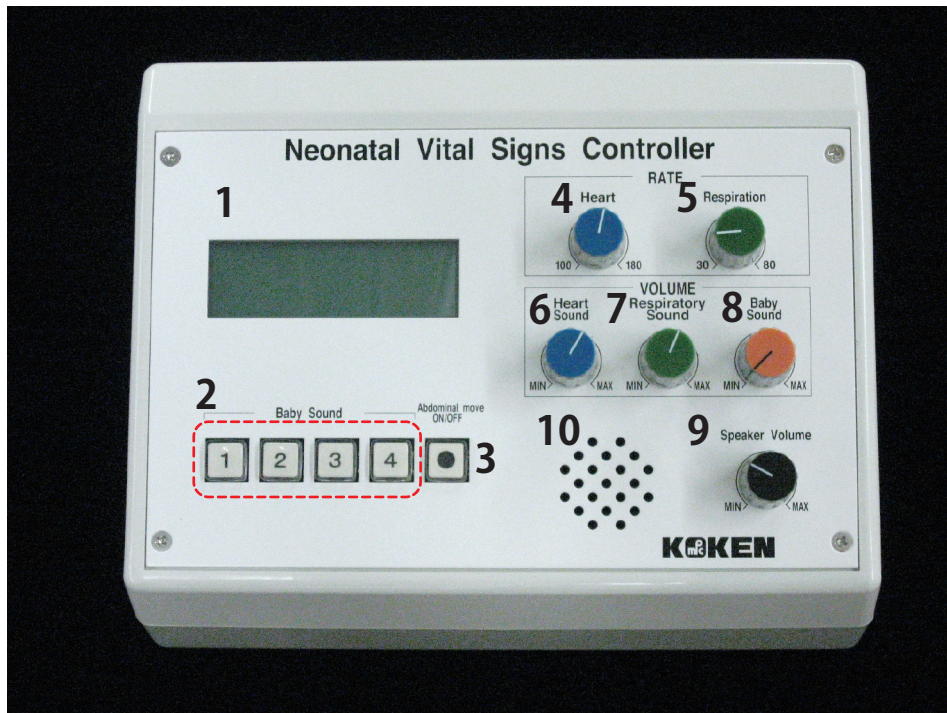
2. Control box

3. AC Adapter (with DC cord)

4. AC cord

※ If necessary, prepare an appropriate plug adapter according to the wall sockets in your country.

Control box front panel



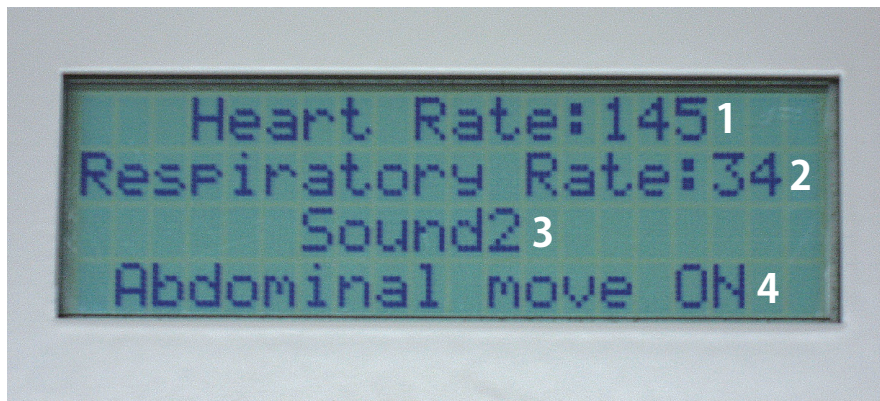
1. Monitor
2. Crying sound buttons
3. Thoracoabdominal movement On/Off button
4. Heart rate adjustment dial
5. Respiratory rate adjustment dial
6. Heart sound volume dial
7. Breathing sound volume dial
8. Crying sound volume dial
9. External speaker volume dial
10. External speaker

Control box rear view



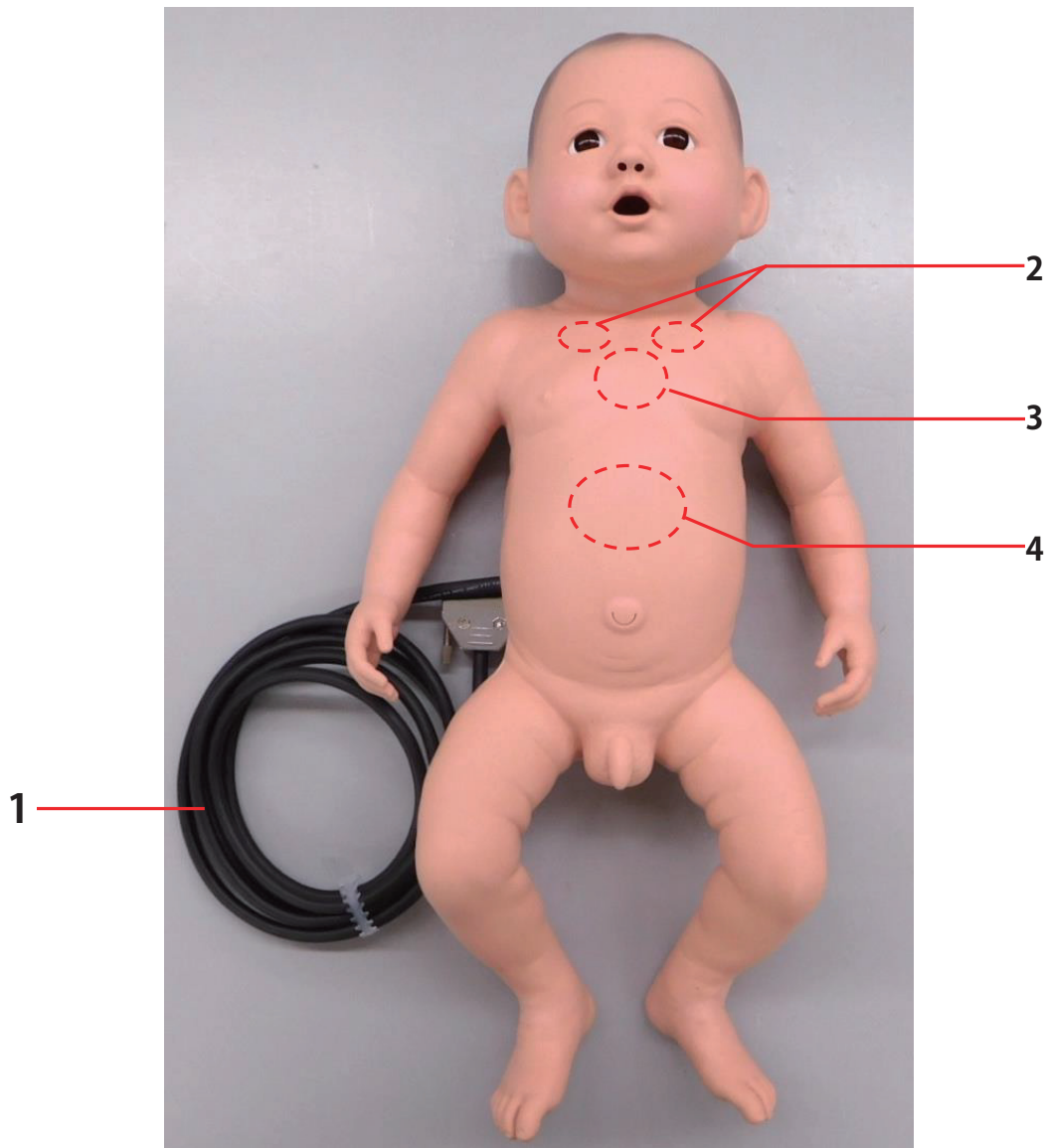
1. Cable connector
2. Power switch
3. Power inlet

Monitor



1. Heart rate display
2. Respiratory rate display
3. Crying sound setting display
4. Thoracoabdominal movement setting display (On/Off)

Neonatal simulator



- 1 . Connecting cord
*Cannot be disconnected from the simulator
- 2 . Breathing sound internal speaker
- 3 . Heart sound internal speaker
- 4 . Thoracoabdominal movable part

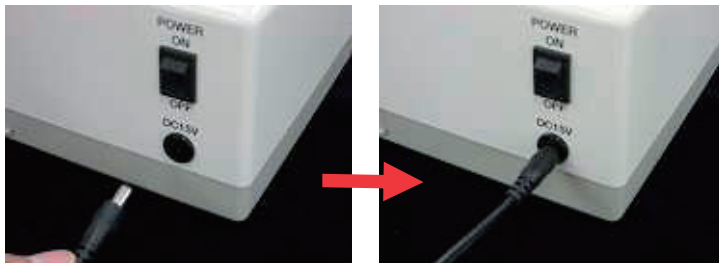
3. Handling the Simulator

3-1 How to operate the simulator

1. Connect the cable attached to the simulator to the cable connector on the control box.



2. Connect the DC cord to the power inlet of the control box.



3. Connect the AC cord to the AC Adapter.

4. Plug the AC cord into a power outlet.

5. Turn the power switch on the control box to the 'ON' position.

6. When the power is turned on, the monitor displays the heart rate, respiratory rate, crying sound setting and thoracoabdominal movement setting, and each function starts operating.

7. Adjust the heart and respiratory rates and volume to the desired level by turning the respective dials.

8. Thoracoabdominal movement is controlled by pressing the corresponding button to ON or OFF.

9. Press buttons 1-4 to select the desired crying sound and adjust the volume by turning the volume dial.

10. Heart and breathing sounds are also audible from the external speaker. Use the external speaker volume dial to adjust the volume to the desired level.

* Crying sounds are emitted from the simulator's mouth, rather than from the external speaker.

* Refer to the table on the following page for details on each of the control box buttons and dials.

3-2 How to operate the control box



1 Select crying sound	Baby Sound 1 2 3 4	These 4 buttons are used to select the desired crying sound. * The LM-098's 4 crying sound buttons are designed to simulate the following meanings: 1) hungry; 2) sleepy; 3) "hold me"; and 4) comfortable. Crying sounds differ among infants and the crying sounds made by the LM-098 are intended solely as a reference.
2 Configure thoracoabdominal movement	Abdominal move ON/OFF	Pressing this button turns the thoracoabdominal movement on & off. * Auscultation is possible while thoracoabdominal movement is on, but a slight buzzing noise may be present. Turn off the thoracoabdominal movement to better distinguish heart and breathing sounds.
3 Adjust heart rate	Heart Rate	Turn the dial to adjust the heart rate within the range of 100-180 beats per minute.
4 Adjust respiratory rate	Respiration Rate	Turn the dial to adjust the respiratory rate within the range of 30-80 breaths per minute.
5 Adjust heart sound volume	Heart Sound	Turn the dial to adjust heart sound volume during auscultation.
6 Adjust breathing sound volume	Respiratory Sound	Turn the dial to adjust breathing sound volume during auscultation.
7 Adjust crying sound volume	Baby Sound	Turn the dial to adjust crying sound volume.
8 Adjust external speaker volume	Speaker Volume	Turn the dial to adjust external speaker volume.

3-3 After Use

1. Turn the power switch to the 'OFF' position.
2. Unplug the AC cord from the power outlet.
3. Disconnect the DC cord from the control box.
4. Disconnect the connecting cord from the control box.

4. Simulator Configuration Chart

Item	Quantity
Neonatal simulator (with connecting cord)	1
Control box	1
AC adapter (with DC cord)	1
AC cord	1
Storage bag	1
Instruction manual (this document)	1

5. Specifications

Neonatal simulator

Height	Weight	Head circumference
Approx. 48 cm	Approx. 2,700 g	Approx. 34 cm

Control box

Length	Width	Height	Weight	Power supply
Approx. 16 cm	Approx. 22 cm	Approx. 11 cm	Approx. 1 kg	100V - 240V AC

Caution

- Only use the AC adapter and AC cord provided with the simulator.
If necessary, prepare an appropriate plug adapter according to the wall sockets in your country.