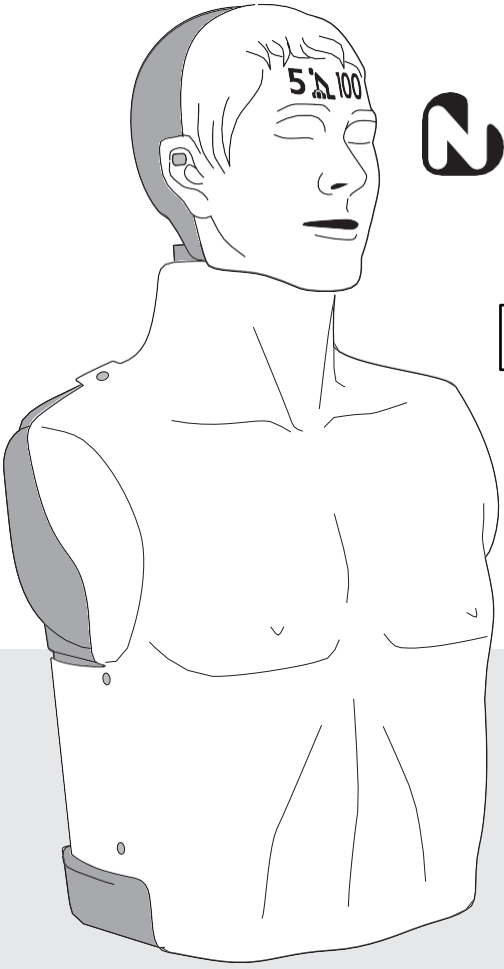


Nurugo CPR manikin®

INSTRUCTIONS FOR USE

L360/L360B/L380/L380B

bestCPR

bestCPR, Inc. www.AED.kr

This manual includes the information necessary for use of Nurugo CPR manikin.
Be sure to read this manual carefully in advance for accurate and safe use of the manikin.
※ For more detailed information, check out the homepage of best CPR,Inc.at www.aed.kr.

Product overview

The Nurugo series products are manikins for CPRtraining.
Designed to provide advanced features, such as visual and auditory feedbacks, the Nurugo seriesproducts improve the quality and efficiency of your CPR training.

Features

Refer to the following for the enhanced features of the Nurugo series products.

- **Thick and sturdy chest**
  The chest part was designed for realistic, deep chest compressions over 5 cm.

- **Visible clavicles (collarbones) and extended skin**
  Clavicles are clearly visible, and the skin is extended on the left side of the manikin for more precise AED pad placement.

- **Realistic neck design resembling human body**
  - The head rotates 15° to left and right.
  - Double neck joints allow for vertical movements of the head.

- **Metronome-guided compression training**
  Audible signals may be turned on (30 times,110 times/min rate) at an early stage of compression to provide a guidance on the compression rate.

- **Visual and auditory feedbacks**
  Feedbacks through visual display and sound provide guidance and show the performance of a CPR training. Also, information about a full cycle of contraction and relaxation by chest compression is provided as well, for more effective CPR training.

- **Vertical pressure feedback and posture correction function**
  - Application of tilt sensor inside mannequin.(patent registration)
  - You can correct the vertical compression posture of CPR
  - It is important to keep your arms straight and press them vertically to the ground.

Product overview (in some models only)

Display

Depth and rate of the chest compression are indicated. The color of the display changes according to the quality of a chest compression.

Battery cover

Used to replace batteries. Refer to Replacing the batteries on page 8 for information about replacing the batteries.

Extended skin for AED pad placement

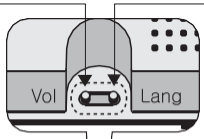
Extended skin provides a precise spot to attach the AED pad for a training of antero-lateral placement (middle-line from the armpit)

CPR clicker switch

The CPR clicker is used to verify compression depth. It makes a "click" sound when the compression depth reaches 5 cm. You can turn it on or off by pushin g in or pulling out the switch.

Volume setting button (located under the skin, at the bottom of the product) **Language setting button**

Used to adjust volume of speaker output. The audio volume will change in the order of (LOW- MEDI UM-HIGH) each time you press the button.



Used to change languages. Languages will change in the following order each time you press the button.
(KOR-ENG-CHN-JPN-GER-FRA-SPN-UAE-INA-VN)

Auditory feedback switch

Turns on or off the auditory feedback feature.

Visual feedback switch

Turns on or off the visual feedback feature.

Metronome switch

Turns on or off the metronome guide sound.

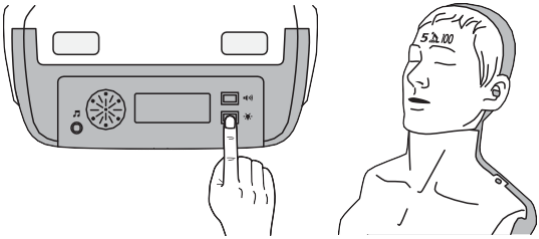
Speaker

Used to provide voice instructions and audio instructions/feedbacks.

Refer to the following to utilize the enhanced features the Nurugo series products provide.

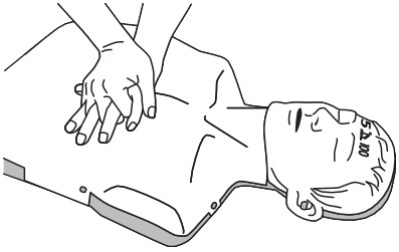
Performing feedback-guided compressions

1. Push the feedback button to turn on the feedback.



- The power LED and the forehead display will be turned on.

2. Perform compressions on the chest following the visual and auditory feedbacks.



- The following feedbacks will be provided.

Utilizing the features (in some models only)

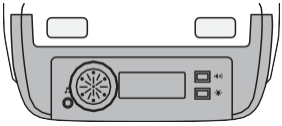
Visual feedback

The color of the displayed information will change according to the depth and rate of your compression.

※The latest AHA GUIDE recommends a compression rate of 100 to 120 times per minute. Accordingly, NURUGO evaluates the average value of 110 times asan appropriate compression rate.

Indications			Description
Compression depth	5	Green	Compression depth is exactly 5cm ~6cm.
		Red	Compression depth is not 5cm~6cm.
Compression rate	100	Green	Compression rate is 100~120 times/min.
		Red	Compression rate is not 100~120 times/min.
Indication		Green	pressed vertically
		Red	not pressed vertically

Auditory feedback



Voice instructions will be provided to inform you of the current CPR status and what you have to do to successfully complete the CPR session.

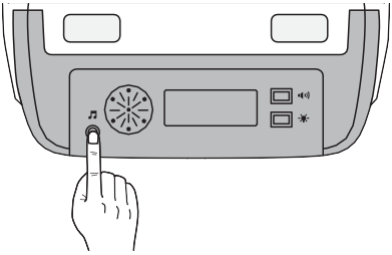
Voice instruction	Description
“Press it more deeply.”	Compression depth is shallower than 5 cm.
“Press it faster.”	Compression rate is less than 100 times/min.
“You are doing well.”	Compression depth is 5cm~6 cm, and compression rate is over 100~120 times/min.
“Press it a bit slowly.”	When the Compression rate is over 120 times/min.
“Press it a more deeply and slowly.”	When the Compression depth is less than 5cm, and compression rate is over120times/min.
“Relax the chest.”	When the chest is not relaxed correctly.
“Press down vertically”	When chest compressions are not applied vertically to the center of the chest

Note

- The visual feedback feature of your Nurugo manikin will enter standby mode if no chest compression is detected for 30 seconds.
- While in standby mode, the visual feedback operation will automatically resume when it senses compressions on the chest.
- The power indicator will blink if the battery is low, and a voice instruction will be made. ("The batteries is low. Please replace it with the new one.") Refer to Replacing the batteries on page 8 for information about replacing batteries.

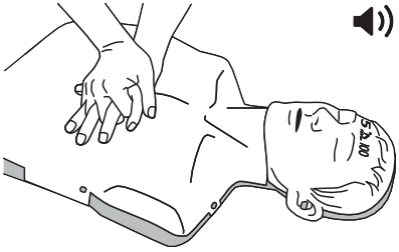
Performing metronome-guided compressions

1. Push the metronome button to turn on the metronome.



- Audible signals will be output at a rate of 110 times/min.

2. Perform compressions to the metronome signals.

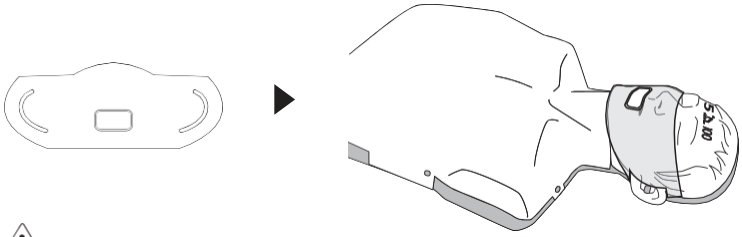


- The metronome signal will sound 30 times at a rate of 110 times/min, then it will turn off automatically.
- You can push the metronome button again to turn the signal sound on.

Utilizing the features

Performing an artificial respiration (For all Nurugo models)

1. Unpack the face shield and install it to the face of the Nurugo manikin.

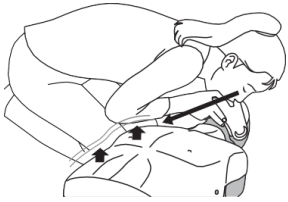


CAUTION

- Replace the face shield and the lung bag between training sessions to avoid possible bacterial infection or transmission of diseases.
- If the product is used by multiple users, thoroughly clean and sanitize the face of the Nurugo manikin using alcohol wipes after each use, or let each user (trainee) use one's own face shield during the training.
- Clean the face of the Nurugo manikin using the Manikin Cleaner spray and alcohol wipes whenever visible contamination is observed.

2. Adjust the head position to open the airway and hold the nose with your thumb and index finger.

3. Through the mouth, give 2 breathes per each second.



- While giving breathes, ensure that the air is reaching the lungs by observing the chest movement.

4. Chest compression posture correction function.

- Application of tilt sensor inside mannequin! (patent registration)
- You can correct the vertical compression posture of CPR.
- It is important to keep your arms straight and press them vertically to the ground.

Cleaning the product

Follow the instructions below to maintain your Nurugo product for safe and trouble-free use.

- Thoroughly clean and disinfect the product after each use (the face, inside the mouth, and the chest area, especially).
- For cleaning, remove the skin from the product. Use warm soapy water or detergent to clean the skin.
- Do not submerge the product for cleaning.
  - Moisture will get inside the product, causing damages to the batteries and electronic parts.

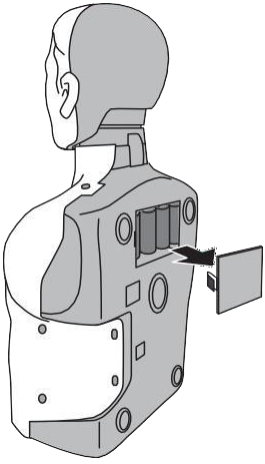
Storing the product

- Store the product in a cool, dry place where the product is not exposed to direct sunlight.
  - Exposure to sunlight may cause discoloration and deterioration of parts, such as the skin.
  - Moisture may get into the product can cause damages to the internal electronic parts.
- Refer to the following table for storage conditions.

Storage temperature	-10°C - 50°C (14°F - 122°F)
Relative humidity	10% - 95%

Replacing the batteries

Remove the battery cover on the back of the product and replace the batteries.



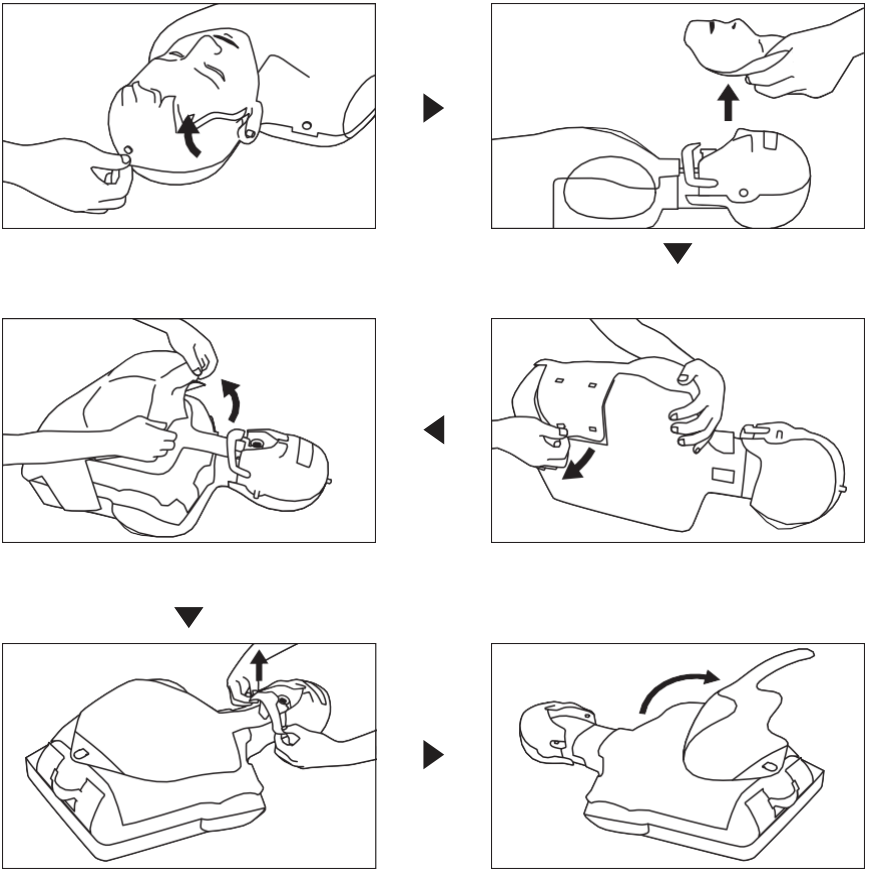
Note

- The power indicator will blink if the battery is low, and a voice instruction will be made. ("The batteries is low. Please replace it with the new one.")
- Use D-type 1.5V alkaline batteries only. Product damages caused by using unauthorized batteries may not be covered under the product warranty.
- Do not use new batteries and old batteries together. Replace all 4 batteries at the same time.
- If you plan on not using the Nurugo product for an extended period, remove the batteries before storing.

CAUTION

Keep the used batteries out of reach of children and safely dispose of them.

How to separate and combine vinyl lung bag
(Combining is done inreverse order of separation.)



1. Install App (application model L360B / L380B)

The dedicated APP for the CEM kiosk is installed on the kiosk body.

2. Run the app

CPR 체험대 환경설정

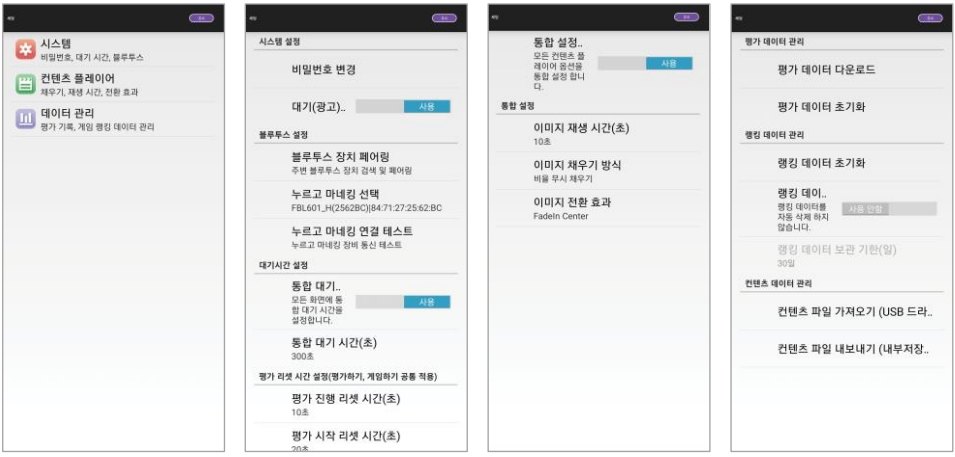
When you install the CEM KIOSK experience table, press it and the mannequin is connected to the KIOSK's Bluetooth device.

※If the mannequin pairings and connections are not available, set them up as below.

3. APP Configuration

Please check the "CEM KIOSK User's Manual" for the configuration password.

The setup menu consists of system setup, content player, and evaluation data management.



Attempt to communicate with the Nurugo mannequin.

If successful, Nurugo mannequin will be changed to evaluation mode, and a brief indication of success or failure will appear as "Connection Success".

(If you don't see the "Connection Success" sign, shut down the APP and try again.)

How to useCEM KIOSK application model

Nurugo CPR manikin®

Example of connecting to a kiosk

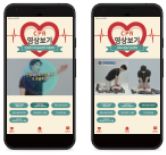
CEM KIOSK22
(22 TOUCH SCREEN)

CEM KIOSK43
(43 TOUCH SCREEN)

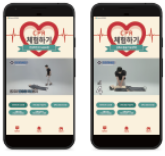
Example of an application running screen

1 Standby Screen

2 Watching Videos



3 Experience



4 Evaluation

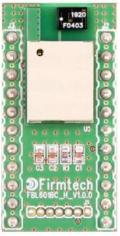
5 Games

4. System Settings

① Press Bluetooth Pairing to enable Bluetooth and perform pairing with Nurugo Mannequin on the pop-up Bluetooth Settings screen.

② Select Nurugo Mannequin from the list of paired devices.

Bluetooth 5.2 Low Energy Embedded Module



FBL601BC_H (Product default settings)

Classification	Settings
Device Name	FBL601_H(XXXXXX)
Role	Peripheral
UART (baud rate, data bit, parity bit, stop bit)	9600-8-N-1
Advertising Interval	1000ms
Connection Interval	100ms
PIO Direction	FF(PIO Port All Output)
PWM Mode	0(PWM Disable)
ADC Timer	0(ADC Disable)

Product Specifications

Division	Nurugo L360	Nurugo L360B	Nurugo L380	Nurugo L380B
Product name	CPR training mannequins			
Size	35cm X 63cm X 21cm			
Weight kg [1]	3.9kg			
Power supply (battery) [2]	6v, D type(4)			
Operating temperature	15°C ~ 30°(59°F ~ 86°F)			
Storage temperature	-10°C~ 50°C (14°F ~ 122°F)			
Humidity	5% ~ 95% relative humidity			
Bluetooth	-	O	-	O
CEM KIOSK	-	Exclusive product	-	Exclusive product
Product composition	Body(1),Facial skin(1), face shield(20), lung bag(1), manual(1), carry bag(1), D type battery(4), cleaning spray for manikins (1)			

1) Not including the weight of battery

2) Recommended to use alkaline battery (1.5Vx4)

Note

- When practicing chest compression, students are to touch 'Nurugo CPR manikin' wearing disposable gloves. If the skin of the manikin becomes hand-stained repeatedly, it may not be removed easily.

- If several students are using one 'Nurugo CPR manikin', be sure to clean the facial part of the manikin with alcohol cotton whenever the students are changed.
  If it is difficult to clean it each time, the students should use their own 'vinyl face shield'.
  If a stain is found while using 'vinyl face shield', it is required to clean it with exclusive MANICLEAN and alcohol cotton for disinfection.

- Whenever an education class is finished, clean the surface of 'Nurugo CPR manikin' with exclusive MANICLEAN and alcohol cotton for disinfection for maintenance. In particular, clean the face, ins ide the mouth and chest part meticulously.

- Replace the vinyl lung bag after practicing artificial respiration with 'Nurugo CPR manikin'. If not, the vinyl lung bag may not be unfolded easily in the next class due to the moisture in the bag and th e bacteria and fungus may increase inside the bag and give harm to the students.

- 'Nurugo CPR manikin' can be used cleanly for a long time if its skin is cleaned regularly.
  When cleaning the manikin, be sure to take the skin off the body and clean it with warm soapy water or cleanser.
  The body contains battery and electric circuit and thus it should not be dipped or soaked by water.

- The skin of 'Nurugo CPR manikin' may be discolored by lipstick, water color or greasy-based ink, latex gloves or other dyes and may be deformed if it is heated.

- If you don't use it for a long time, please separate the batteries and store them. Battery leakage will flow and cause failure.
  When you replace batteries, you must replace all four batteries.

Note

Free repair and maintenance services are provided for any problem of the product if a customer has used the product adequately according to this manual for 1 years from the date of purchase. (However, free maintenance services are not available in the following case even during the warranty period.)

- A failure or damage due to unfaithful wrong operation including an operation not done according to this manual
- A failure or damage caused by repair at another repair agency instead of the designated service agency or a repair or renovation at will
- A failure or damage caused by shock from the outside (including fall) after purchase of the product
- A failure or damage caused by natural disasters such as fire, earth quake, flood and thunderstroke and abnormal voltage
- A failure or damage caused by use of the product in an inadequate environment (Ex.: high temperature, high humidity)
- A failure or damage caused by entry of sand,soil, water, etc. into the product
- A failure or damage caused by battery leakage
- A failure or damage caused by serious mistake of the consumer

This warranty regulations are effective only in the Republic of Korea Thailand. Inquire with the place of purchase of this product about the terms and conditions of guarantee of our company.

FCC Instructions

FCC Compliance Statement

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from which the receiver is connected. • Consult the dealer or an experienced radio/TV technician for help.

FCC Caution

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

	CE Mark		Korea Certification (KC) Mark
	FCC Mark		RoHS Mark
	TELEC(JMIC)		

bestCPR

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