Heart One & Heart Two
Trainer

User Manual

St John
Ambulance

Before Use

Thank you for purchasing HEART One/HEART Two Trainer.

Please read this manual carefully before using the trainer. Please keep the trainer for easy access after use.

Manufacturer

ViVest Medical Technology Co., Ltd.

Unit 205,206,207, 81 Building, SIP BioBay, No.218, Xinghu Street, Suzhou Industrial Park, Suzhou Area, Suzhou Free Trade Pilot Zone, 215123 Jiangsu, PEOPLE'S REPUBLIC OF CHINA

TEL: +86-0512-65730937
FAX: +86-0512-65730937
Email: service@vivest.cn

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For information concerning any of our products, please contact VIVEST.

Instructions for Use

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Instructions for Use

1. General Information

This chapter describes the product models, specifications and features. Before using this product, please read the contents of this manual carefully to ensure that you can master the correct use method.

1.1 Specifications

Model: HEART One/HEART Two Trainer. (Hereinafter called 'trainer'.) HEART One Trainer has LED lights, graphic panel and voice prompt.
HEART Two Trainer has a colour LCD display, full-colour rescue images, voice prompt and text prompt.

WARNING:
Do not store the Trainer with your HEART series defibrillator, or where it could be confused with the defibrillator during emergency.

1.2 Features and Functions

The trainer completely simulates the operation of the real defibrillator in clinical use, and its main functions and features are as follows:

Voice Prompt and Indication Light
The trainer will guide the user during training.
HEART Two trainer guides the operator by features of LCD display, full-colour rescue images, voice and text prompt.
HEART One trainer instructs the operator by features of LED light, graphic panel and voice prompt.

Analysing Heart Rhythm
The trainer will analyse the heart rhythm automatically when the pads are applied onto manikins properly. For paediatric manikins, apply the pads to the chest and the back as shown.

Simulation of Defibrillation
If shockable rhythm is detected, the trainer will simulate to charge and guide the operator to defibrillate. If non-shockable rhythm is detected, the trainer will guide the operator to begin CPR.

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2. Product Overview

This product consists of host, remote control, training electrode, portable bag and instruction manual. Please check whether the components are complete before use.

2.1 Components

This section describes the components, appearance, and functions of buttons and indicators on the control indicator panel.
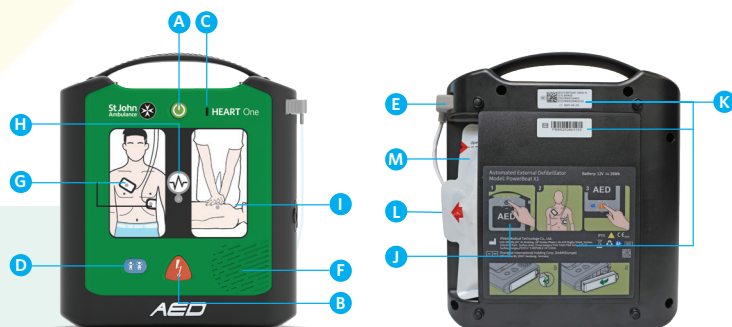
2.1.1 HEART One trainer

Fig-1 Heart One Trainer

Description	Functions
A. Power Button	To turn on the trainer by pressing this green button. To turn off the trainer, press the green button again and hold it down for over 1 second.
B. Shock Button	To press the Shock button to deliver the simulated shock after charging.
C. Infrared (IR) Communications Port	In the power-on state, it is used to receive remote control signals. Keep remote control to be aligned to this port when sending signals.
D. Child Mode Button	To enter the child mode by pressing and holding this button for 3 seconds, with a voice prompt "Enter the child mode, please press and hold the child button for 3 seconds", (To switch from child mode to adult mode, you need to shut down and restart).
E. Electrodes Connector	Connect the electrodes with device.

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F. Speaker	When the trainer is being used, its voice instructions or beep sound come from this speaker.
G. Pads Indicator	After the trainer is turned on, the indicator is always on before the electrode connector are plugged into.
H. Heart Rhythm Analysis Indicator	This light is on as an indication of trainer "Analysing Heart Rhythm Don't Touch Patient".
I. CPR Indicator	This light is always on when a CPR advised.
J. Quick Start Guide	A brief introduction for the trainer's basic operation steps.
K. Name Plate	Device and manufacturer information.
L. USB Port	This port is used for updating language and software program.
M. Training Electrode	Consists of training electrodes cables and pads.

2.1.2 HEART Two trainer

Fig-2 Heart Two Trainer

Description	Functions
A. Power Button	To turn on the trainer by pressing this green button. To turn off the trainer, press the green button again and hold it down for over 1 second.
B. Shock Button	To press the Shock button to deliver the simulated shock after charging.
C. Infrared (IR) Communications Port	In the power-on state, it is used to receive remote control signals. Keep remote control to be aligned to this port when sending signals.

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D. Child Mode Button	To enter the child mode by pressing and holding this button for 3 seconds, with a voice prompt "Enter the child mode, please press and hold the child button for 3 seconds", (To switch from child mode to adult mode, you need to shut down and restart).
E. Electrodes Connector	Connect the electrodes with device.
F. Speaker	When the trainer is being used, its voice instructions or beep sound come from this speaker.
G. Information Button	Voice prompt "Information Button" after this button is pressed during training mode.
H. Language Button	To switch the language press this button during training mode.
I. CPR Indicator	This light is always on when a CPR advised.
J. Quick Start Guide	A brief introduction for the trainer's basic operation steps.
K. Name Plate	Device and manufacturer information.
L. USB Port	This port is used for updating language and software program.
M. Training Electrode	Consists of training electrodes cables and pads.

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2.1.3 HEART Two trainer LCD display

Fig-3 Heart Two Trainer LCD display

Description	Functions
A. Shock Times	Displays the current total number of simulated shocks.
B. Information Icon	An icon for the information button at the left side of screen.
C. Language Icon	An icon for the language button at the right side of screen.
D. Battery Icon	Displays the current battery capacity remaining.
E. Adult/Child Mode Icon	Displays current training scenario is adult mode or child mode.
F. Timer Icon	Shows current working time.
G. CPR Mode	Displays the current CPR mode.
H. Volume Icon	Displays the current volume.

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2.2 Remote Control

Fig-4 Remote Control

Buttons	Description	Functions
1 2 3 4 5 6	Six Standard Training Scenarios	The six pre-programmed standard training scenarios can be simulated by pressing these buttons. (The detail features are described below).
CPR	CPR Mode	To switch the CPR mode. (1) 30 compressions/2 ventilations. (2) 15 compressions/2 ventilations. (3) Compressions only.
Lang	Language Switch	To switch the language of voice prompt.
X1 ⇌ X3	HEART one/Two Trainer Mode Switch	To switch the working interface to HEART One without LCD display) or HEART Two trainer mode (with LCD display).
− +	Volume Control Button	(+)increase or(-) decrease the volume (Volume can be set among Low, Medium, and High. The default setting is Medium).
▶ǀǀ	Pause/Resume Button	Pause (resume) current scenario.
⚡	Shock Button	Simulate a shockable rhythm.
⊘	NO Shock Button	Simulate a non-shockable rhythm.

Instructions for Use

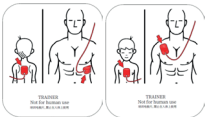|			
	Pads Attached	Simulate good electrodes connection.
	Pads Not Attached	Simulate loose electrodes connection.
	Push Harder Button	Press the PUSH HARDER button during the CPR interval to force the trainer to say "Push Harder"
	Good Compressions Button	Press the GOOD COMPRESSIONS button during the CPR interval to force the trainer to say "Good Compressions"
	Low Battery	Simulate low battery, voice prompt "Low Battery"
	Motion Interference	Simulate motion artifact, voice prompt "Keep Patient Still"

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The 6 Training Scenarios:

Button	Standard Scenario	User Response
1	Shock for one time No shock Shockable rhythm detected, 1 shock needed for conversion	- Shockable rhythm - 1 shock - 2 minutes CPR - Non-shockable rhythm - 2 minutes CPR-2 minutes CPR
2	Shockable rhythm detected, 2 shock needed for conversion	- Shockable rhythm - 1 shock - 2 minutes CPR - Shockable rhythm - 1 shock - 2 minutes CPR - Non-shockable rhythm - 2 minutes CPR
3	Shockable rhythm detected, 3 shock needed for conversion	- Shockable rhythm - 1 shock - 2 minutes CPR - Shockable rhythm - 1 shock - 2 minutes CPR
4	Shockable rhythm detected, conversion, return to shockable rhythm, conversion	- Shockable rhythm - 1 shock - 2 minutes CPR - Non-shockable rhythm - 2 minutes CPR - Shockable rhythm - 1 shock - 2 minutes CPR - Non-shockable rhythm - 2 minutes CPR
5	Shockable rhythm	- Shockable rhythm throughout
6	Non-Shockable Rhythm	- Non-shockable rhythm throughout

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2.3 Other Components

Components	Description	Quantity
	Electrodes Wires with Connector	1
	Electrode Pads	1
	Portable Bag	1
	User Manual	1

Instructions for Use

3. Installation and Preparation

3.1 Installing or Replacing the Batteries

3.1.1 Installing Batteries

1) Open the battery cover.
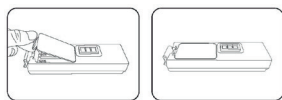2) Insert 4 new AA alkaline batteries into the recess, oriented as illustrated in the . battery.

Fig-5

3.1.2 Installing Batteries Compartment

1) Insert the battery compartment into the bottom of trainer.
2) Press down to ensure the latch holds it into battery slot.
3) Check whether it is fully inserted into the battery slot.
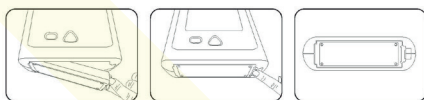

Fig-6

3.1.3 Removing the battery compartment

Replace the batteries immediately after a voice remind of "Low Battery". Remove the batteries as the below instructions:

1) Ensure the trainer is turned off.
2) Press down the battery compartment buckle.
3) Remove the battery compartment from the trainer.
4) Open the battery cover and take out the old batteries.

Fig-7

Instructions for Use

3.2 Connecting the pads with cable connector

Fig-8 Connecting the pads with cable connector

Put the pads with electrodes wires into the pads compartment on the back of trainer.

Warning: The electrode pads for training are similar in appearance and size to the electrode pads used in clinical defibrillation, but the materials are different. Its only for training use and should not be connected to the defibrillator for clinical emergency use.

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4. Operating Steps of AED Trainer

This section mainly introduces the using of trainer. The whole training is simulated according to real emergency scenarios. During the training, there are text (only HEART Two Trainer), full-colour rescue images (only HEART Two Trainer), voice prompt and indicator lights to guide operator to learn how to use a defibrillator in an emergency.

Brief operation steps:

1) Press the green On/Off button to turn on the trainer.
2) Apply Pads to Patient's Chest as the shown.
3) Plug In Pads Connector as instructed.
4) Continue to follow the trainer's instructions for remainder of scenario.

4.1 Turn on trainer

The trainer starts to work after the power on button pressed, following with a "beep" sound. The green power button remains on, then a voice prompt of "Call for Help"., the user follows the trainer's instructions for remainder of scenario.

4.2 Apply pads as shown

The appropriate placement of the electrode pads is an important factor for the success rate of defibrillation. Therefore, during the simulation training, the electrode pads should be properly attached to according to the type of patient. The trainer voice prompts "Remove Liner From Pads", "Apply Pads to Patient's Chest".

Note:
*Place the electrodes pads on the manikins according to the graphics on the pads
*Press the pad down firmly, then peel and place the other pad.

Fig-9 Placement of Electrodes Pads

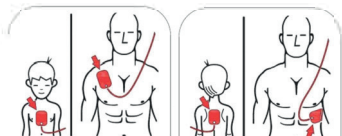Apply the Adult/Child Electrodes Pads to Patient's Chest as shown below :

Fig-10 Placement of Adult/Child Electrodes Pads

Instructions for Use

4.3 Plug in pads connector into port

The user should check whether the electrodes connector has been plugged into the corresponding socket, if not, the trainer will issue a voice prompt "Plug In Pads Connector"
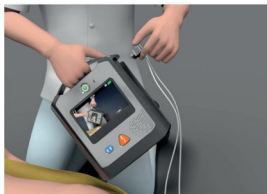

Fig-11 Plug in Pads Connector

4.4 Analysing heart rhythm

The trainer starts to simulate the heart rhythm analysis, after the electrodes connector inserted into. During the heart rhythm analysis, the trainer continuously check whether the electrode connector is plugged into or not. If its detached, the simulation of heart rhythm analysis will be interrupted, and the electrode indicator light will be flashing (Only for HEART One Trainer) and voice prompts " Plug In Pads Connector" .When the electrodes connector is plugged in , trainer voice prompts "Don't Touch Patient, Analysing Heart Rhythm"
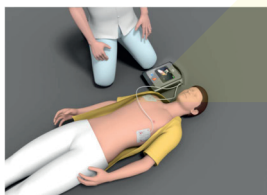

Fig-12 Heart Rhythm Analysis

4.4.1 Shock advise

HEART One/HEART Two Trainer:
In a shock advise scenario, user is instructed with voice reminds "Shock Advise", "Don't Touch Patient, Charging", then a voice prompt" Press Flashing Shock Button" after charging completed. A defibrillation will be released once the shock button was pressed.

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Fig-13 Press Shock Button

Trainer will issue a voice prompt "Shock Delivered", "Begin CPR". The on-screen shock counter updates to reflect the total number of shocks that have been delivered. If the shock button is not pressed, after 30 seconds, the trainer simulates a shock automatically and voice prompts "Shock button not pressed, shock cancelled", "Begin CPR".

4.4.2 No shock advised

Trainer detects a non-shockable rhythm, voice prompt" No Shock Advised", "Begin CPR", then instructs user to start CPR.

4.5 Begin CPR

Fig-14 Begin CPR

Upon entering the CPR scenario, users are guided to perform CPR by following the CPR indicator light (HEART One Trainer only), voice prompts, and full-colour rescue images (HEART Two Trainer only). Users should interact with the manikin and perform chest compressions as instructed. After completing 30 compressions, the trainer prompts: "Breaths," "Breaths." The CPR cycle is completed after delivering two rescue breaths.

Once the CPR scenario is completed, the trainer provides a voice or text prompt: "Stop CPR". The device will then begin heart rhythm analysis again.

4.5 Turn off trainer

After the simulated training, to press and hold on the "ON/OFF button" for turning off the trainer

4. 7 Storage of electrodes cable and electrodes pads

After a training simulation, please put the electrode pads into the Ziplock bag, and then put it into the electrode pad compartment on the back of the trainer.

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5. Maintenance and Troubleshooting

This section describes the daily maintenance, cleaning, transportation, disposal and common troubleshooting of the device.

5.1 Maintenance of pads

1) Attach the electrodes pads onto a special paste board, don't paste it on other . items,that will damage it.
2) Put the electrode pads in a zip lock bag, which will help prolong its service life.
3) Replace the electrodes pads regularly after 20-30 times of usage.
4) Keep the pads clean and far away from the oily substances, dust etc, that may cause its less sticky.
5) Shelf the electrode pads in a cool, dry warehouse, avoid direct sun exposure.

5.2 Routine cleaning of trainer

After each use, clean the trainer with the following cleanser:

• 90% isopropyl alcohol.
• 96% ethyl alcohol.
• Soap and water, or chlorine bleach and water mixture (30 ml/litre water).

Please clean the trainer regularly. Every three months recommended, or increase the cleaning frequency according to usage condition. To follow the steps mentioned below:

1) Shut down, remove the battery from the trainer, and disconnected the electrode connector;
2) Clean the trainer with soft, damp cloth. Do not splash water on the trainer. Do not immerse it in water.
3) Clean the case, handle and screen with soft, damp cloth.
4) Wipe off excess disinfectant with a dry cloth.
5) Put the trainer in a cool and dry place for at least 30 minutes.
6) Make sure the trainer is dry before installing batteries and electrodes.

5.3 Routine disinfection of trainer

Recommended disinfectant:

• 75% ethyl alcohol.
• 70% isopropyl alcohol.

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Please disinfect the trainer regularly, every three months are recommended, or increase the frequency of disinfection according to the usage of the trainer. Please follow the steps below to do disinfecting:

1) Shut down, remove the battery from the trainer, and disconnected the electrode connector;
2) Clean the trainer case, handle and screen with soft, damp cloth using disinfectant;
3) Wipe off excess disinfectant with a dry cloth;
4) Put the trainer in a cool and dry place for at least 30 minutes;
5) Make sure the trainer is dry before installing batteries and electrodes.

5.4 Transportation

To ship the device to a service facility, the battery must be removed from the device, packaged separately, then shipped with the device. The general transportation is allowed, but it is necessary to prevent severe shock, vibration and rain and snow splashing during shipment.

5.5 Disposal treatment

The trainer with its components must be recycled according to local regulations when expired. If any question, consult your local recycling facility. Disposal of electrodes and batteries should also comply with relevant regulations, and they should be recycled or discarded according to your country's regulations.

5.6 Troubleshooting

Some common faults are listed below. If the item-by-item inspection cannot effectively assist in troubleshooting, please return to the ViVest technical support for service.

Behaviour	Possible Cause	Recommended Action	Reminding
Trainer does not power on	No battery installed	Install battery	None
	Low battery or trainer fault	Replace battery	None
	Equipment failure	Contact ViVest Technical Support for service.	None
Trainer shuts down unexpecedly	Low battery	Replace battery	None
	Equipment failure	Contact ViVest Technical Support for service.	None

6. HEART One/HEART Two Trainer Kit Contents

| Item	Quantity
Trainer	1
Remote Control	1
Electrodes Wires with Connector	1
Electrodes Pads	1
Carry Case	1
User Manual	1
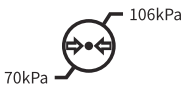
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7. Technical Specifications

Physical	
Dimensions (with handle)	232±1 mm (H) *209±1 mm(W) *59± 0.5mm(D)
Weight	1.1 kg (Including battery and electrodes)
Environment	
Operating and installation conditions	Temperature: 0~50°C Humidity: ≤80% (relative humidity, non-condensing) Atmospheric pressure: 86 ~ 106kPa
Storage conditions	Temperature: -20~+60 °C Humidity: ≤93% (relative humidity, non-condensing) Atmospheric pressure: 70 ~ 106kPa
LCD display (HEART Two Trainer)	
LCD	5″
Resolution	800*480RGB
Trainer	
Power supply	4 AA alkaline batteries, voltage 6.0V
Shutdown current	≤50uA(max)
Working current	≤1A (max)
Operation life (standby)	5 years (max)
Remote Control	
Power supply	DC 3.0V (CR203 coin-cell battery)
Shutdown current	5μA (max)
Working current	25mA (max)

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8. Illustration:

Figure	Description
93% % 0%	Relative Humidity
106kPa →•← 70kPa	Atmospheric Pressure
Temperature symbol	Temperature
Manufacturer symbol	Manufacturer
Fragile symbol	Fragile
Up arrows symbol	Up
Keep Dry symbol	Keep Dry
Do not tumble symbol	Do not tumble the package during handling

Instructions for Use

9. Warranty

The manufacturer provides a reasonable warranty service during warranty period. Once requesting a warranty service, you are obliged to provide proof of purchase from the distributor. And the warranty will be void in the case of:

Violation of instructions.

- Operation error.

- Improper use or handling.

- Unauthorised personnel have repaired the device.

- Force majeure such as lightning strikes.

- Transport damage due to improper packing when sending back.

- No maintenance.

- Damage due to excessive use (such components include batteries, disposable items, etc.)

- The original accessories were not used.

The manufacturer reserves the right to choose to exclude defects, provide non-defective components, or appropriately lower the purchase price based on product defects. If the warranty is invalid, the manufacturer will not bear the cost of transportation.

The manufacturer shall not be liable for any accidental injury caused by the operator's violation of user manual, misuse, or improper handling. Legal warranty requirements are not affected by above situation.
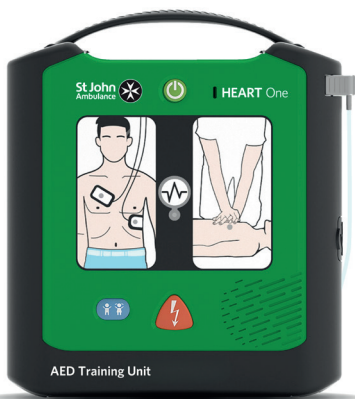
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9. Warranty Card

Please keep this with the training unit

Name	
Telephone	
Address	
Postcode	
Model	
Serial No.	
Purchase Date	
Order No.	
Distributor	

Notes

Manufacturer
ViVest Medical Technology Co., Ltd.

Unit 205,206,207, 81 Building, SIP BioBay, No.218,
Xinghu Street, Suzhou Industrial Park, Suzhou Area,
Suzhou Free Trade Pilot Zone, 215123 Jiangsu,
PEOPLE'S REPUBLIC OF CHINA

TEL: +86-0512-65730937
FAX: +86-0512-65730937
Email: service@vivest.cn

sja.org.uk

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