

## Chapter 2 Preparation

### 2.1 Locate the ECG Machine

Please refer to *Foreword*.

### 2.2 Install Recording Paper

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#### EXPLANATION

Installation of the recording paper may slightly differ from the product you purchased, which will not affect your usage, please operate according to the actual feature of the product.

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See the descriptions below to install the rolling paper:

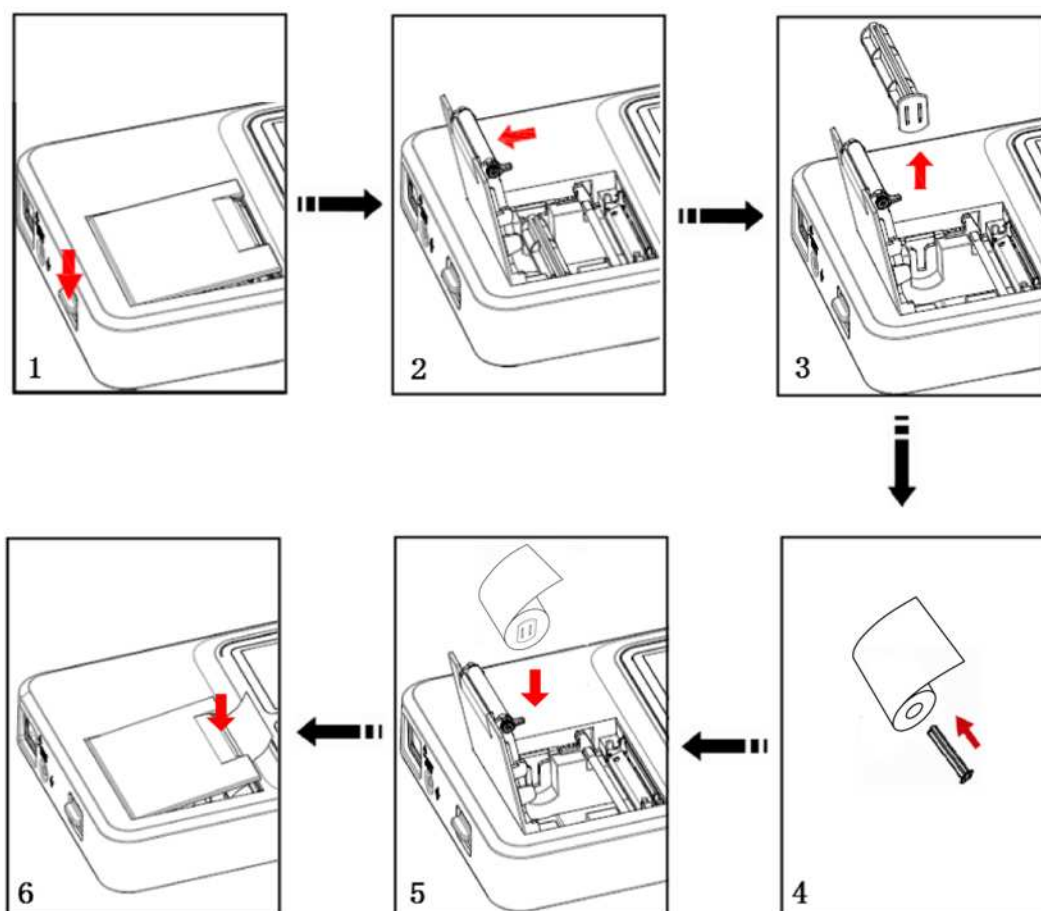


Figure 2- 1 Install the Recording Paper

1. Push the button downwards.
2. Open the Paper Drawer cover.

3. Remove the roller.
4. Insert the roller into the Rolling Paper.
5. Load the recording paper fitly into the Paper Drawer. And make sure the grid side of the paper facing downwards and towards the Thermal Print Head.
6. Pull out the paper about 2cm and press to close the Paper Drawer cover.

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**⚠ CAUTION**

- Please make sure the recording paper is installed fitly and straightly, otherwise it may be stuck.
  - If paper is absent, or used up, or not placed well, alarm will appear on the main interface and the machine does not print.
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## 2.3 Connect to Power Supply

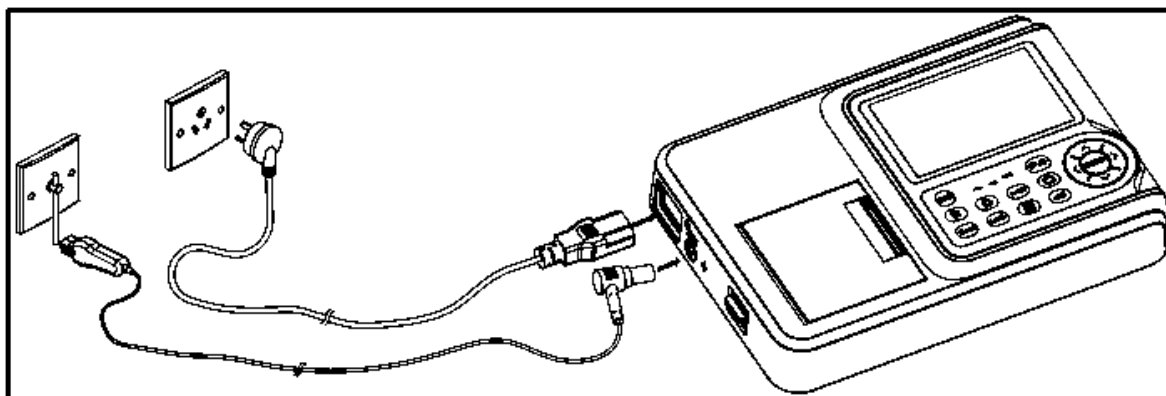


Figure 2- 2 Connect to AC Power Supply

1. Connect the AC Power Cable to the ECG machine and the Power Outlet.
2. Connect Equipotential Cable to the ECG machine and the Equipotential Terminal in the room.

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**📖 EXPLANATION**

The ECG machine is equipped with a built-in rechargeable battery and requires no extra installation. The operator needs to check the battery's capacity before usage.

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**⚠ CAUTION**

- When the ECG machine is operated together with other medical equipment, please use the accompanying Equipotential Cable and connect the Equipotential Terminal of the ECG machine altogether with that of the

other equipments so as to protect the patient from possible electric shock due to current leakage from those equipments.

- It is forbidden to connect the Equipotential Cable to a conductive water pipe or other pipes. Otherwise, there may be hazard of electric shock to the patient.

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## 2.4 Connect to Patient Cable

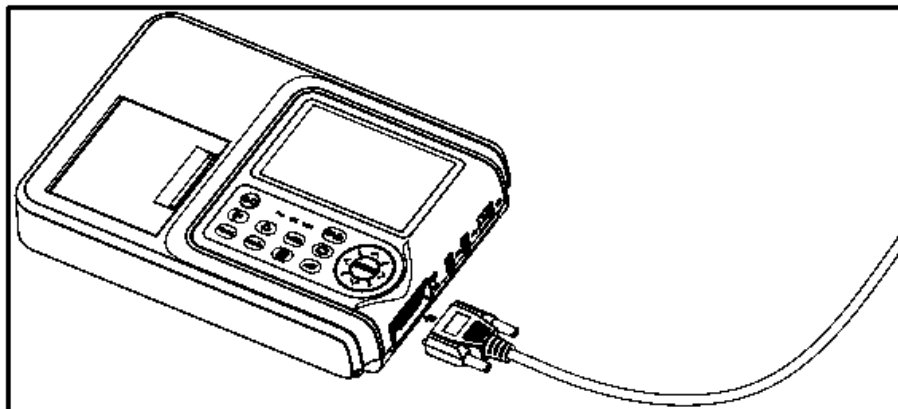


Figure 2- 3 Connect to Patient Cable

Connect the Patient Cable to the ECG machine.

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### CAUTION

Do not use any other Patient Cable except that supplied one. The ECG Patient Cable Connector is exclusively used for connecting the Patient Cable. Do not use it for other purposes.

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## 2.5 Power On/Off

Press  to power on/off the ECG machine.

The ECG machine enters Standby mode if it is not in use for a setting period. Set the duration in **[System Setting] > [Standby Time]**. To exit standby mode, press any key.

The ECG machine will shut down automatically if it is not in use for a setting period. Set the duration in **[System Setting] > [Auto Power Off]**.

## 2.6 Connect to Network

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### ⚠ CAUTION

In the data transmission, if the ECG machine warns “Network connection failed”, please reconnect to network or reset the network configuration.

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1. As shown in the following figure, the cable network system is composed of the ECG machine, the switchboard and the server.
2. Go to [Menu] > [System Setting] > [Cable Network] and set the [IP address], [Subnet Mask] and [Default Gateway] of the ECG machine. If the IP address is in the same network segment of the server, the subnet mask and gateway shall be as the set value of the server. If the IP address is not within the same network segment of the server, subnet mask and gateway of the [Cable Network] shall be set according to actual situations. And make sure the specified gateway does support the data transmission between the two network segments.
3. Select [Server Setting] and set the correct [IP address] and [Port] number of the server.
4. When the machine is connected to network successfully, the icon  will display in the main interface.

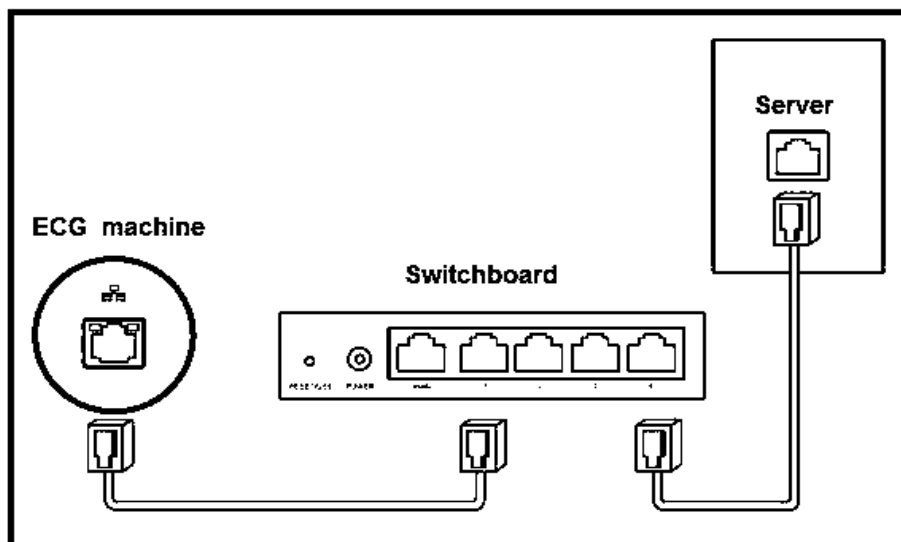


Figure 2- 4 Cable Network Connection

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## 2.7 HL7 Configuration

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### EXPLANATION

HL7 function should be rightly configured before use. The ECG machine should be able to communicate with HIS via HL7 interface protocol if the configuration is successful. Follow the two methods below to configure HL7 function.

1. Adjust HIS's HL7 interface and make sure HIS can communicate with the ECG machine via HL7 interface.
  2. The hospital provides its HL7 interface to the company; the company adjusts the HL7 interface of the ECG machine and make sure the ECG machine can communicate with HIS via HL7 interface.
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To configure HL7 network connection:

Please refer to **Connect to Network** to connect the ECG machine with the Internet; the transfer protocol in System Setting should be HL7 and the IP address and port number should be the same with that of the HL7 server. Please refer to Anysafe HL7Pro Server Installation&Deployment Guide for the method of HL7 transit server's installation and deployment.

## 2.8 Apply Electrodes

Before attaching the electrodes to patient, wipe the skin where the electrodes attached by using medical alcohol, and then apply ECG gel on the skin. After that, place electrodes to the right position. If using the vacuum ball electrodes, you should apply ECG gel on the electrodes, and then pinch the suction ball to make sure the electrodes are attached to skin tightly.

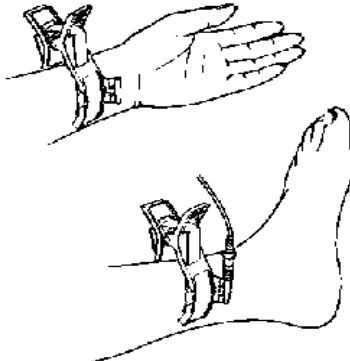
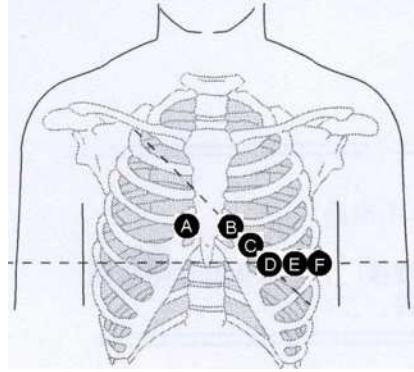
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### CAUTION

- Proper electrode attachment is vital for obtaining accurate ECG waveforms; therefore, please ensure good contact between the skin and electrodes.
- Do not use the new electrodes and the used ones at the same time. Replace all electrodes together when any one of them is supposed to be replaced.
- Don't use disposable electrodes more than one time.
- Confirm the disposable electrodes are within the validity period.
- Use the disposable electrodes as soon as possible after opening the package (generally within 7 days).
- Electrodes or conducting point of lead wires shall not be in contacting with any other metal part or conductor.

- Avoid the electrodes to be dragged by the lead wires.
  - Make sure patient's skin contacted with the electrodes has been well pretreated.
  - Clean the stain on the electrodes with medical alcohol whenever the electrodes are contaminated.
  - Make sure metal electrodes of limb electrodes touch fully with skin and tightly enough.
  - Make sure adjacent electrodes and ECG gel, especially chest ones, are not contacted with each other.
  - If the examination involves a short period of time, if ECG gel is unavailable, please wipe the skin with medical alcohol to keep the skin clean and moist, rapidly attach the electrodes.
  - It's not allowed to use saline water as substitute when ECG gel is not available. The saline water will cause corrosion on the electrodes.
  - For chest and back application of pediatric, disposable electrodes are suggested.
  - Electrodes shall be properly stored. When electrodes have been used for a certain period, they may become corroded and oxidized at the surface. Whenever this happens, the electrodes must be replaced.
  - Do not mix electrodes of different types and manufacturers. Do not use re-useable electrodes and disposable ones together, or it will affect the recording.
  - Please use our company's or authorized electrodes to make sure qualified ECG signals.
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## 2.8.1 Electrodes Attachment

<b>Limb Electrodes Placement</b>				
	IEC	AHA	Description	Figure
	R Red	RA White	Right Arm	
	L Yellow	LA Black	Left Arm	
	N Black	RL Green	Right Leg	
	F Green	LL Red	Left Leg	
<b>Standard 12-lead Attachment</b>				
	IEC	AHA	Description	Figure
A	C1 Red	V1 Red	Fourth inter-costal space at right sternal border.	
B	C2 Yellow	V2 Yellow	Fourth inter-costal space at left sternal border.	
C	C3 Green	V3 Green	Equidistant between B and D	
D	C4 Brown	V4 Blue	Fifth inter-costal space at left mid-clavicles line	
E	C5 Black	V5 Orange	Left anterior auxiliary line at the horizontal level of D	
F	C6 Purple	V6 Purple	Left mid- auxiliary line at the horizontal level of D	

### 2.8.2 Lead Signals Formation Scheme

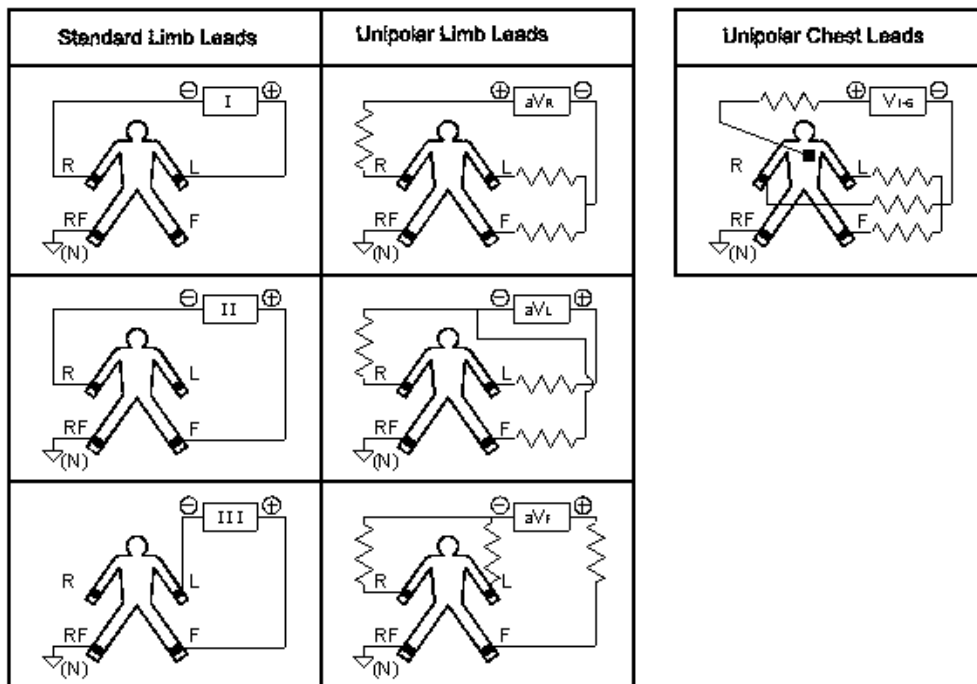


Figure 2- 5 Lead Connection