Electric Hospital Bed User Manual

Lingshi International Trade (Hebei) Co., Ltd

⚠ Read all the contents of the instruction manual carefully before use.

一、Product Name and Specification Model

1、Product Name ： Electric Hospital Bed

2、Product Model：

Model	Type of driver	Side rails type
LSe	single control	sectional type

3、Dimension：

Length（bed platform）	Width（bed platform）	Height(bed platform to ground)
1935±50mm	900±50mm	475-735±20mm

二、Product structure composition

The electric hospital bed is composed of the bed surface part (backboard, sitting board, leg board, foot board), the bed frame part (upper bed frame, front and rear bed headboards, left and right guardrails), the lower bed frame part (lifting mechanism, lower bed frame, casters), the infusion stand, and the electrical control part (electric push rod, controller, battery, hand controller, emergency stop switch).

三、Main performance of the product

1、Adjust the angle of the mattress support platform

a）The angle between the back panel and the horizontal plane can be adjusted within the range of 0°to 70°

b）The angle between the thigh plate and the horizontal plane can be adjusted within the range of 0° to 30°

c）The angle between the lower leg board and the horizontal plane can be adjusted within the range of 0° to 20°

d）The angle between the thigh plate and the calf plate should be adjustable to 180 °

e）The angle between the back plate and the thigh plate should be greater than 90°

f）The head-down supine position (Trendelenburg position) should be at least 12°

2、Working load

When in normal use, the electric hospital bed should be able to withstand a safe working load of 1700N without any obvious deformation or damage.

3、Emergency stop function

A device controlled by the patient to stop the bed function should be equipped. This device should be placed within the patient's reach and in a location where it will not accidentally trigger any function of the electrically-powered bed.

4、Emergency battery

In the emergency situation where the grid voltage is interrupted, the backup

battery enables the backrest to lower and the patient to assume the prone position with head down.

5、Work noise

The noise generated by the electric hospital bed under normal use conditions should not exceed 65 dB(A).

四、Suitable Scope

This product is used for the diagnosis, treatment or monitoring of adult patients under medical supervision, to support the patient's body and form the required clinical position.

五、Operating conditions

1. Environmental temperature: 10℃ - 40℃.
2. Relative humidity: 30% - 75%.
3. Atmospheric pressure: 700 hPa - 1060 hPa.
4. Power connection: Rated voltage 220V, rated frequency 50Hz.

六、Installation and Usage Instructions

1. Place the electric hospital bed on a level surface and ensure a stable contact with the ground.

2. Installation of head/footboard components: The headboard is higher and is installed at the head of the bed, while the footboard is lower and is installed at the foot of the bed. Align the hooks of the head/footboard with the bed rail pins respectively, and then lock them (see Figure 1).

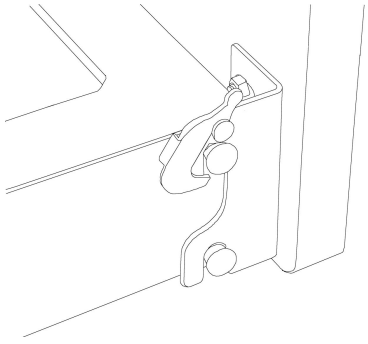


Figure 1

3. After the electric hospital bed is installed and in place, the brake pedal should be depressed to put the casters in a braking state.

4. Plug the power plug into an AC 220V socket and turn on the power switch.

5. Hold the hand controller and operate according to the icons on the panel of the hand controller (see Figure 2).

6. Press the buttons on the hand controller. The bed panel will rise or descend as indicated by the functions, and stop when it reaches the desired position. Immediately stop pressing the buttons when the movement of the bed panel is complete.

7、Press the emergency stop button installed at the position of the patient's right hand on the bed frame. All movements of the bed will immediately stop. By turning the emergency stop button clockwise, the movement function of the bed can be restored.

Nurse Control Panel

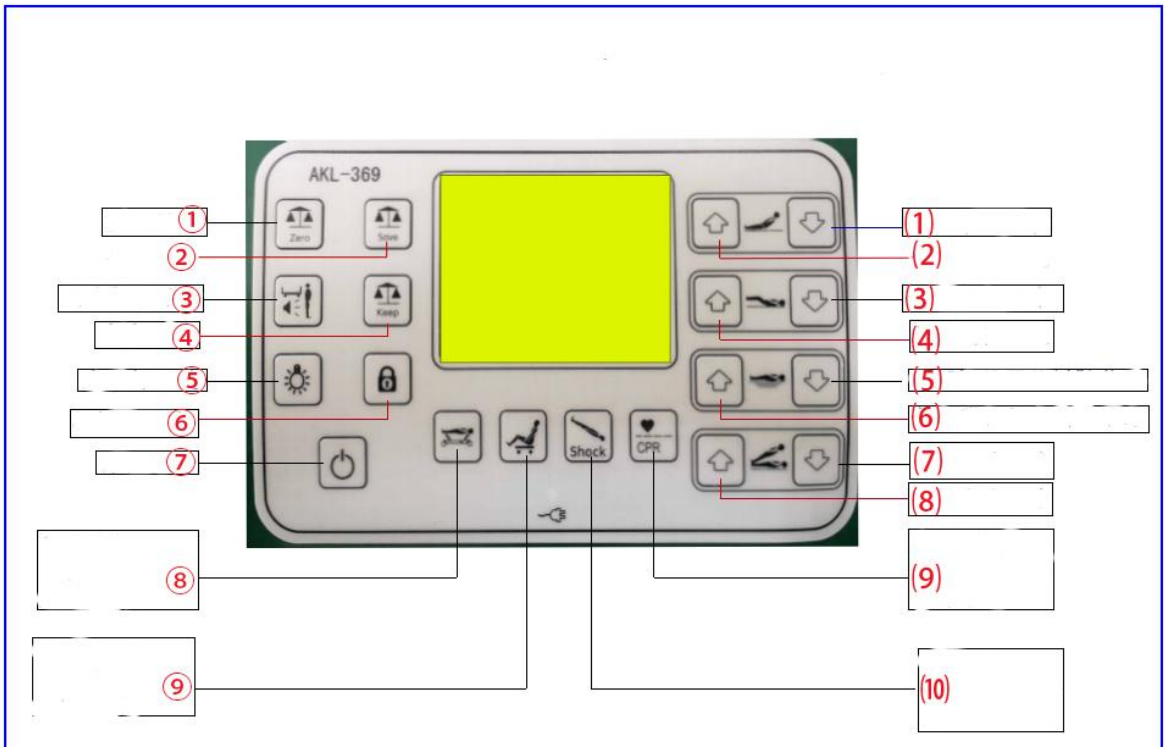


Figure 2 Functional Diagram of the Controller

①Zero weight ②Save weight ③Bed alarm switch ④Weight keep ⑤Bed light switch ⑥Side rail button lock switch ⑦Power on button ⑧Doctor's inspection position: Back support leg support lowers，Bed body rises ⑨Cardiac chair function

⑴Back up ⑵Back down ⑶ Foot up ⑷Foot down ⑸Height up ⑹Height down ⑺TR function ⑻Anti-TR function ⑼CPR ⑽TR function

The weighing function is calibrated

1. Weighing calibration operation method (Note: Before calibration, please ensure

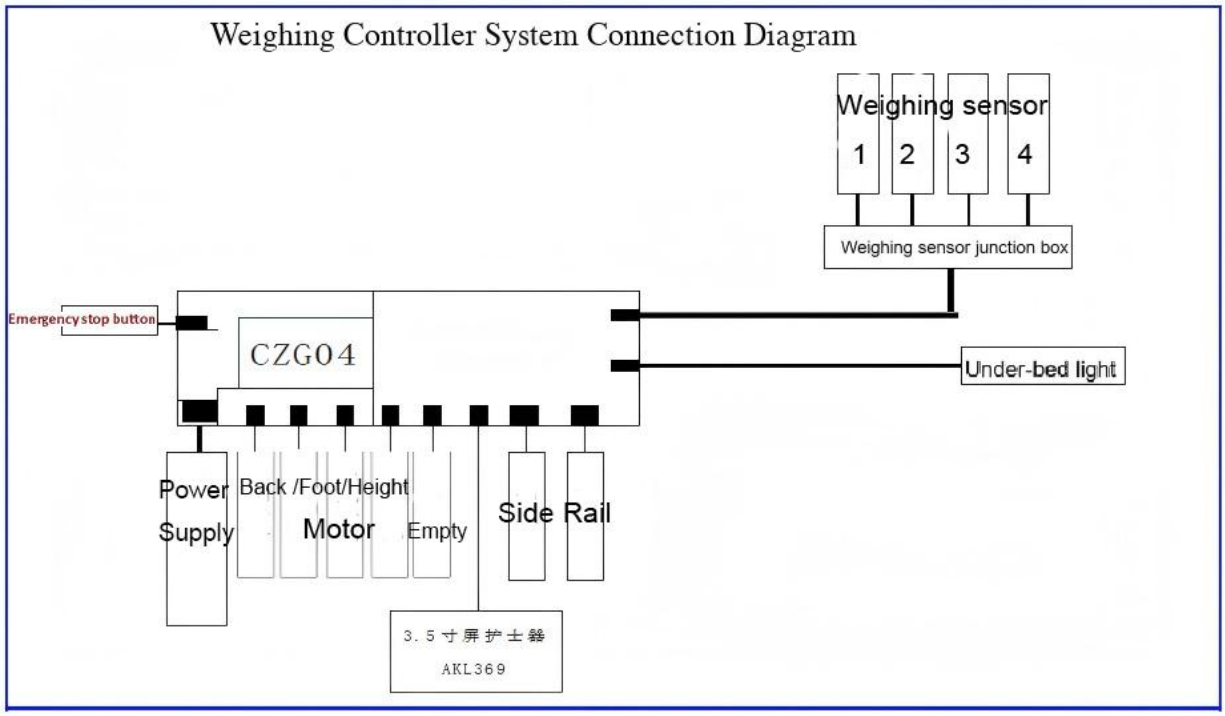
that the bed is flat and there are no objects on the bed surface)

Step 1: After turning on the machine, press the nurse's floor light button and hold it down without releasing for 3 seconds to enter the weight calibration interface.

Step 2: After entering the calibration interface, zero calibration is performed. Check that there are no objects on the bed surface and wait for 3 seconds. Then press the overall button to determine the zero point.

Step 3: After determining the zero point, enter the weight calibration interface. Please press the +1kg button on the back, -1kg button on the bottom, +10kg button on the leg, and -10kg button on the bottom to add the weight to the standard weight of the weights. Then place the weights on the bed surface and wait for 3 seconds until the bed is stable. Press the overall button to determine the calibrated weight.

Step 4:After the weight calibration is completed, remove the weights from the bed surface, press the zero button on the nurse's device to zero the weight, and the calibration is complete. (Note: After calibrating the weight, make sure to zero the weight.)



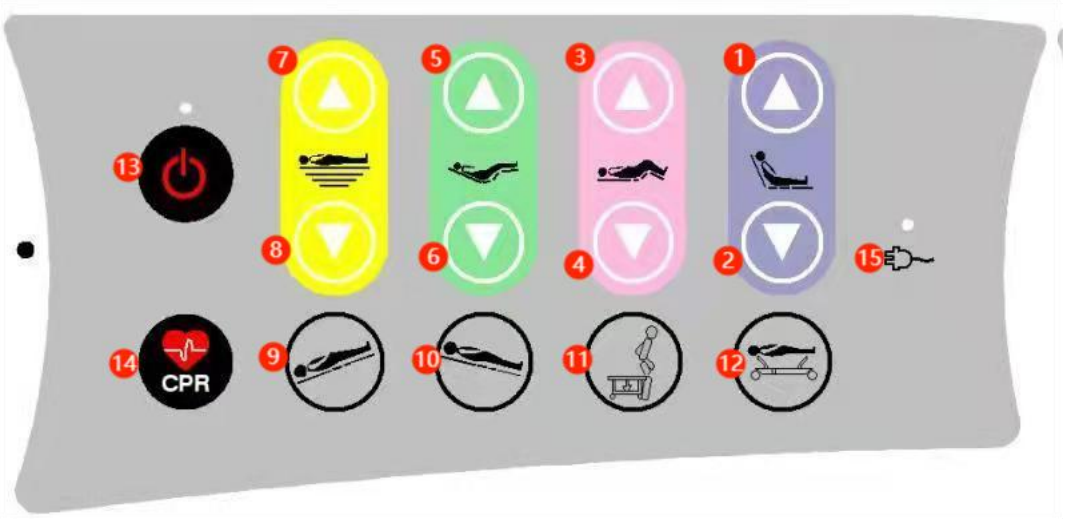


Figure 3 Guardrail Button Function Diagram

1. Back lift Function 2. Back Level Function 3. Leg Lift Function 4. Leg Landing Function 5. Back and Leg Simultaneous Lift Function 6. Back and Leg Simultaneous Landing Function 7. Overall Rise Function 8. Overall Lowering Function 9. Head Low, Feet High Function 10. Head High, Feet Low Function 11. One-Click Seat Position Function 12. One-Click Inspection Position 13. Power Wakeup Function 14. Electronic CPR One-Click Reset Button 15. Power Indicator Light

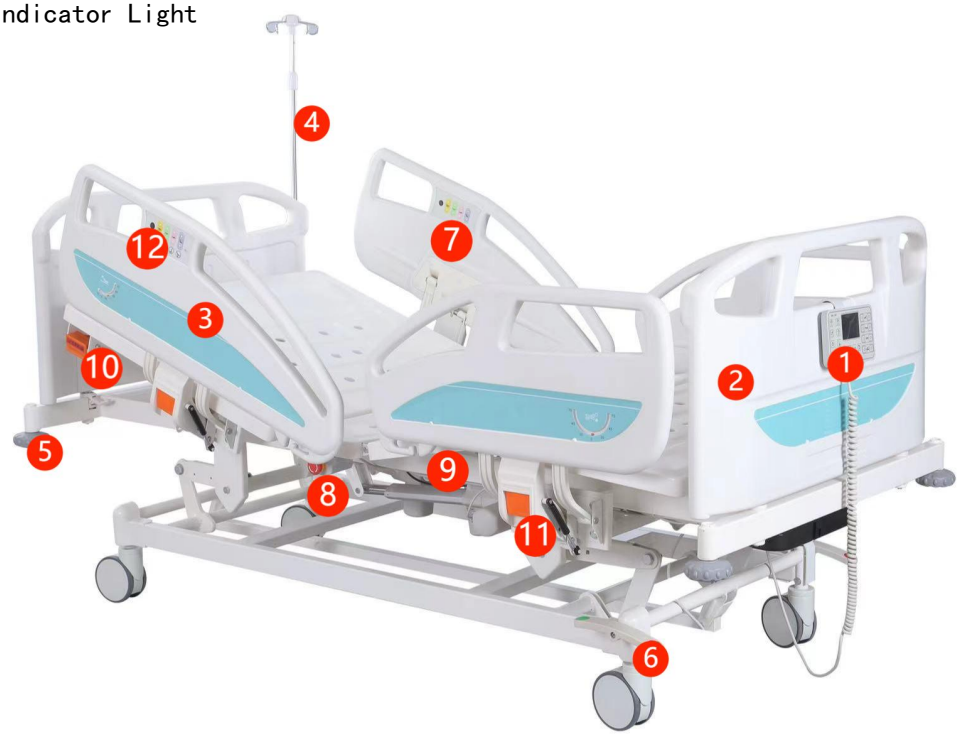


Figure 4 Schematic Diagram of Various Parts of the Hospital Bed

1. Nurse Operating Device 2. Head and Tail Support Panels 3. Medical Four-Layer Guardrails 4. Infusion Stand 5. Head Anti-Collision Wheel 6. Central Control Brake Device 7. Inner Guardrail Patient Control Button 8. Emergency Stop Switch Function 9. Drainage Device 10. Mechanical CPR Switch 11. Guardrail Elevator Switch 12. Outer Side Buttons of Guardrail

七、Notes

1. Before using any function of this product, please follow the warning signs or labels placed conspicuously on the device, such as the "ON" (start braking) and "OFF" (release braking) signs on the casters or the middle braking control lever.

2. When using the bed, first step on the caster brake pedal or the middle braking control lever to put it in the braking state. To prevent the bed from moving, raise the caster brake pedal or the middle braking control lever when moving is needed, and the braking control can be released.

3. The safe working load of the bed is 1700N (including the patient 1350N, the mattress 200N, and the accessories 150N). Do not use it beyond the load limit.

4. If the electrical control part is damaged, it should be repaired or replaced by professional personnel or the dedicated maintenance personnel of the manufacturer. Non-professionals are not allowed to randomly disassemble the electrical components.

5. To avoid safety hazards caused by improper handling of the power cord, such as:

a) The casters pressing over the cable or wire.

b) The compression between the head/footboard components and the movable parts.

6. Professional personnel should conduct at least one inspection of the bed annually. Any identified safety hazards should be promptly eliminated to reduce risks during use.

7. This product uses a F2AL250V fuse. Users should not change the fuse specification by themselves.

8. When not using this product frequently, please disconnect the external power supply.

9. The discarded spare batteries should be properly disposed of in accordance with the relevant environmental protection requirements of the country to avoid environmental pollution.

八、Special Instructions for Safe Use

1. The emergency stop controller is located on the patient's right hand side. If the patient feels unwell while adjusting the bed, they should immediately press the emergency stop button on the controller and wait for medical personnel to handle the situation.

2. In the absence of supervision, to reduce the risk of the patient rolling off the bed

and getting injured when getting on or off the bed or lying on it, the bed board should be placed at the lowest position.

3. When the patient's condition (such as disorientation due to medication or clinical conditions) may cause the patient to get stuck, in the absence of supervision, the mattress support platform should be placed in the flat position (unless the medical staff has other specific requirements for special or exceptional circumstances).

4. After the bed surface rises, no other items are allowed to be placed between the bed surface and the bed frame.

5. When using the bed, it should be in a braking state to ensure safe use.

6. It is strictly prohibited to touch the power switch and controller with wet hands. Special attention should be paid to preventing children from playing with the controller.

7. In the event of a sudden power outage, the backup battery power will automatically start. By operating the handheld controller, multiple functions can be completed more than ten times to restore the necessary functions of the bed in an emergency.

8. The use of high-pressure spray cleaning is prohibited.

九、Maintenance and upkeep

1. The surface of the hospital bed should be wiped frequently to keep it clean and tidy, thereby prolonging its service life.

a) Use a cleaning cloth to wipe it. After use, clean the cloth and soak it in 250mg/L chlorine dioxide disinfectant for 30 minutes, then rinse off the disinfectant and dry it for later use.

b) The maintenance cycle of the hospital bed is one month. Every month, it is recommended to disinfect and clean the bed. Use a disinfectant laundry solution containing 500mg/L chlorine dioxide for cleaning, then wipe it clean with water to avoid residual disinfectant from causing harm to the human skin.

2. The electrical control system has a self-lubrication function. During use, there is no need for oil lubrication treatment to avoid staining the bed body.

3. If the battery is heard to make a power shortage alarm sound during use, please immediately charge it; when not in use, charge it at least once every two months, and each charging time is 12 hours.

The user can replace the battery pack themselves. When replacing, first unplug the wire plug, then unscrew the entire battery pack with a screwdriver through the fixed

screws, and remove it. Install the new battery pack, wires and screws in the original position and tighten them.

4. The replacement of damaged components should be completed by professionals or under the guidance of professionals. The repair of the electrical system must be carried out under power-off conditions.

十、Explanation of the service life of key components

1. The battery has a lifespan of 2 years under normal usage conditions.

2. The service life of the electric push rod is 5,000 hours.

十一、Transportation and storage

1. The packaged hospital beds can be transported using ordinary transportation vehicles. During transportation, they should be handled gently, and must not be thrown, heavily pressed, rolled over, or exposed to rain.

2. The packaged hospital beds should be stored in an indoor environment with a temperature range of -20℃ to 55℃, a relative humidity of no more than 85%, free from corrosive gases and with good ventilation.

十二、The meanings of the symbols used in the product and label

⧈ Class II equipment			Part B: Application Section
 Safe working load			Attention! Or refer to the random file.
ON	Start braking	OFF	Release the brakes

十三、Product Quality Assurance Statement

1. Within one year after purchasing this product, you can enjoy our company's free repair service.

2. The following situations are not covered by the free repair service.

a) Damage caused by not using, maintaining and storing the product in accordance with the requirements specified in the user manual.

b) Damage caused by other accidents or human sabotage.

3. If your product has a malfunction or damage, please contact our company or the dealer as soon as possible so that we can provide you with timely repair services.

4. Before repair, please show the purchase voucher. After the product exceeds the warranty period, our company still provides free services. During the repair, only the

cost of replacing parts will be charged.

5. If the user needs, our company can provide a list of product components, function diagrams, electrical control schematic diagrams, etc., which are helpful for professionals to use during the repair process.

十四、Electromagnetic Compatibility Declaration

1. The treatment instrument should be installed and used in accordance with the electromagnetic compatibility information provided in this appendix.

2. The connection cables and switches provided by our company must be used. The power cord used by this equipment has passed the "CCC" certification.

3. Warning: Using other manufacturer's accessories besides the connection cables and switches provided by our company may result in an increase in emissions or a decrease in immunity.

4. To ensure that the electrically-powered bed can be used normally and to prevent any increase in emissions or a decrease in immunity, please select the connection cables and related accessories provided by our company.

5. Using accessories, transducers or cables from other manufacturers together with the electrically-powered bed may result in an increase in emissions or a decrease in immunity of the equipment or system.

6. The electrically-powered bed should not be stacked with other devices operating at the same or similar frequencies. If stacking is necessary, it should be verified that it can operate normally under the configuration used.

7. Basic performance: The equipment should not have any unexpected actions.

8. Portable and mobile radio communication devices may affect the use of this treatment instrument. When using this treatment instrument normally, it is recommended to stay away from portable and mobile radio communication devices or turn them off.

9、Cable information

Cable name	Length（m）
Power cord	3
Remote control connection cable	3

表 201

Guidelines and manufacturer statements-electromagnetic emissions		
The electric bed is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall ensure that it is used in this electromagnetic environment.		
Launch tests	complian ce	Electromagnetic Environment-Guidelines
Radio frequency emission GB 4824	1 group	The electric bed uses radio frequency energy only for its internal functions. Therefore, its radio frequency emission is very low and the possibility of interference with nearby electronic equipment is very small.
Radio frequency emission GB 4824	A class	Electric beds are suitable for use in all facilities that are not household and are not directly connected to the public low-voltage power grid of the household.
Harmonic emission GB 17625.1	not applicable	
Voltage fluctuation/shooting emission GB 17625.2	not applicable	

表 202

Guidelines and manufacturer's statement-Electromagnetic Immunity			
The electric bed is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall ensure that it is used in this electromagnetic environment			
immunity test	ICE60601 test level	Acceptable level	Electromagnetic Environment-Guidelines
electrostatic discharge GB/T17626.2	± 6KV contact discharge ±8KV air discharge	± 6KV contact discharge ±8KV air discharge	The floor should be wood, concrete or tile, and if the floor is covered with synthetic material, the relative humidity should be at least 30%
Electrical Fast	±2KV for power lines	± 2KV for power	The network power supply

Transient Pulse Group GB/T17626.4		lines	should have the typical quality used in commercial or hospital environments
surge GB/T17626.5	± 1KV line to line ±2KV line to ground	± 1KV line to line ± 2KV line to ground	The network power supply should have the typical quality used in commercial or hospital environments
Power line voltage dip, short interruption and voltage change GB/T17626.11	<5%UT, lasting 0.5 cycle (on UT, 95% temporary drop) 40%UT up. Lasts 5 cycles (60% temporary reduction on UT) 70% UT. Lasts 25 cycles (with a temporary 30% drop on UT) <5%UT, lasting 5s (On the UT, more than 90% of the temporary drop)	<5% UT, lasting 0.5 cycle (on UT, 95% temporary drop) 40%UT up. Lasts 5 cycles (60% temporary reduction on UT) 70%UT. Lasts 25 cycles (with a temporary 30% drop on UT) <5%UT, lasting 5s (On the UT, more than 90% of the temporary drop)	The network power supply should have the typical quality used in commercial or hospital environments. If the user of an electric bed needs to run continuously during a power outage, it is recommended that they use an uninterruptible power supply
Industrial frequency magnetic field (50Hz) GB/T17626.8	3A/m	3A/m	The power frequency magnetic field should have the typical horizontal characteristics of the power frequency magnetic field in a typical place in a commercial or hospital environment
Note: UT refers to the AC grid voltage before the test voltage is applied.			

表 204

Guidelines and manufacturer's statement-Electromagnetic Immunity			
The electric hospital bed is expected to be used in the following specified electromagnetic environment, and the purchaser or user shall ensure that it is used in this electromagnetic environment			
immunity test	ICE60601 test level	Acceptable level	Electromagnetic Environment-Guidelines
Radio frequency conduction GB/T17626.6 radio-frequency radiation GB/T17626.3	3V (effective value) 150kHz ~ 80MHz 3V/m 80MHz ~ 2.5GHz	3V (effective value) 3V/m	Portable and mobile radio frequency communication equipment shall not be closer to any part of the electric hospital bed than the recommended isolation distance using cables, which shall be calculated using a formula corresponding to the transmitter. Recommended isolation distance $d=1.2\sqrt{P}$ $\sqrt{P}$ d=1.2 $\sqrt{P}$ 80MHz ~ 800MHz $\sqrt{P}$ d=2.3 $\sqrt{P}$ 800MHz ~ 2.5GHz $\sqrt{P}$ Where: P--maximum rated output power of transmitter provided by transmitter manufacturer, in watts (W); d--recommended isolation distance in meters (m). The field strength of a fixed radio frequency transmitter is determined by surveying the electromagnetic field a, and should be lower than the compliance

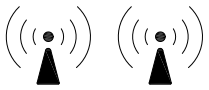
			level at each frequency range b. Interference may occur near the equipment marked with the following symbol. 
Note 1: At 80MHz and 800MHz frequencies, the formula for the higher frequency band should be used. Note 2: These guidelines may not be appropriate for all situations. Electromagnetic transmission is affected by absorption and reflection by buildings, objects and human bodies.			
Fixed transmitters such as base stations for wireless (cellular/radio) phones and mobile radios, amateur radio systems, AM/FM broadcasting, etc., theoretically cannot have their field strength accurately predicted. To evaluate the electromagnetic environment of fixed radio transmitters, electromagnetic field surveys should be conducted. If the measured field strength at the electric bed's location exceeds the aforementioned RF compliance levels, the device should be inspected to verify normal operation. If abnormal performance is detected, supplementary measures may be necessary, such as readjusting the treatment device's orientation and positioning. B at the whole frequency range of 150kHz ~ 80MHz, the field strength should be less than 3V/m.			

表 206

Recommended isolation distance between portable and mobile radio frequency communication equipment and electric hospital beds			
Electric beds are expected to be used in an electromagnetic environment with controlled radiation harassment. Based on the maximum output power of the communication equipment, the purchaser or user can prevent electromagnetic interference by maintaining a minimum distance between portable and mobile radio frequency communication equipment and this therapy device.			
Maximum transmitter rating output power W	Isolation distance corresponding to different frequencies of transmitter		
	150kHz ~ 80MHz $d=1.2\sqrt{P}$	80MHz ~ 800MHz $d=1.2\sqrt{P}$	800MHz ~ 2.5GHz $d=2.3\sqrt{P}$

0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For the maximum rated output power of the transmitter not listed in the above table, the recommended isolation distance d, in meters (m), can be determined by the formula in the corresponding transmitter frequency column, where P is the maximum rated output power of the transmitter provided by the transmitter manufacturer in watts (W).

Note 1: At 80MHz and 800MHz frequencies, the formula for the higher frequency band should be used.

Note 2: These guidelines may not be appropriate for all situations.Electromagnetic transmission is affected by absorption and reflection of buildings, objects and human bodies.