COMEN

SCD600
Sequential Compression System



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01 Product overview

02 Accessories connection

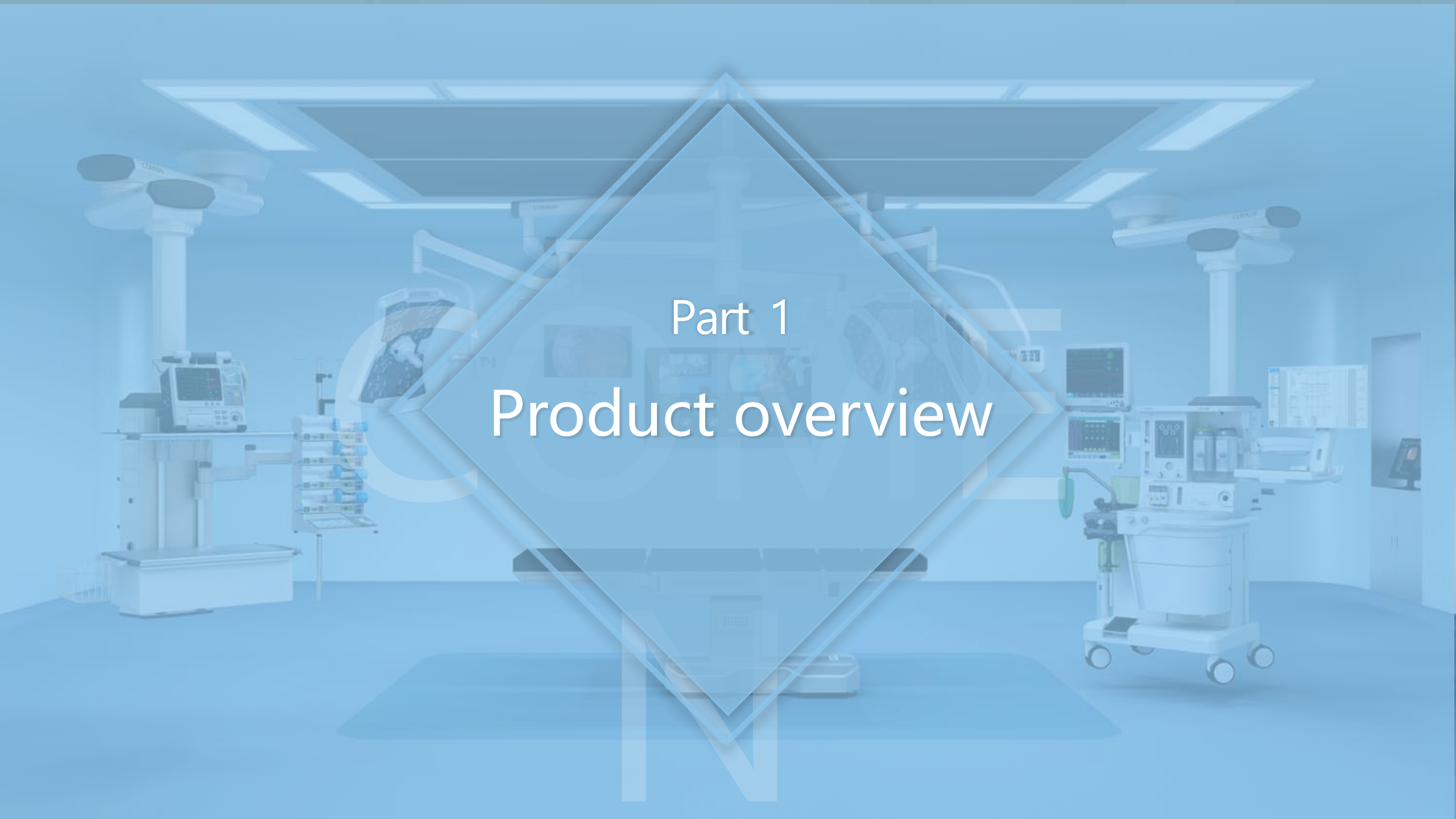
03 Operation and setting

04 Hardware introduction

05 Troubleshooting

06 Care and maintenance





Part 1

Product overview

Product overview

Working condition

- **Normal working conditions**

Working temperature:0℃～45℃;
Working humidity:15%～80%;
Barometric pressure:70.0kPa～106.0kPa。

- **Electrical environment**

Electric power：100-240V～ 50/60Hz 0.3-0.15A;
Battery：11.1V，2200 mA 。

- **Storage condition**

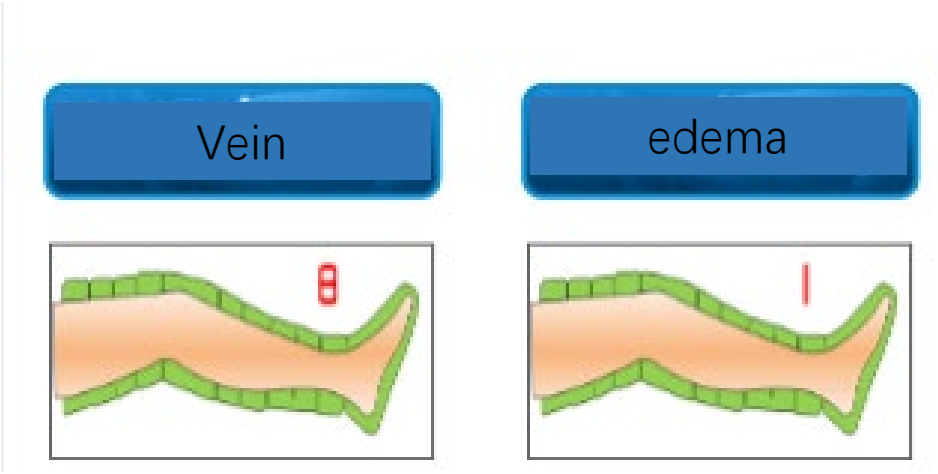
Storage temperature：-40℃～60℃;
Storage humidity：15%~93%;
Barometric pressure: ： 70.0kPa～106.0kPa。

Product overview

Operating principle

Purpose:
This Sequential Compression System is designed to increase the flow rate of the patient's venous blood during intermittent pneumatic compression, thereby helping prevent the occurrence of deep vein thrombosis and pulmonary embolism.

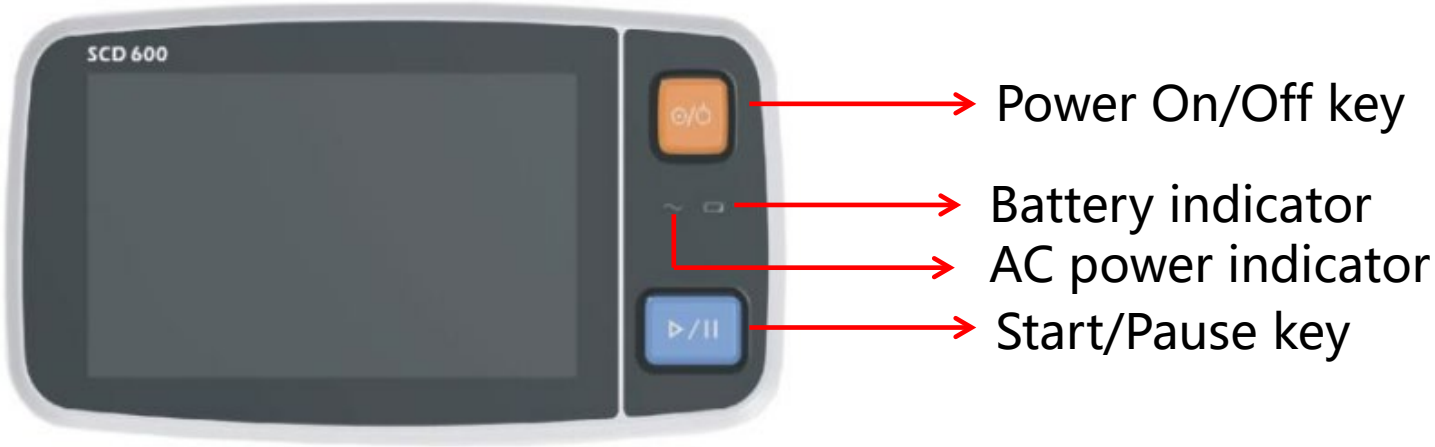
Principle:
By cavity inflatable balloon order and rhythm of inflating rubber extrusion, deflated, the cycle of formation of body pressure, resulting in increased venous blood flow.
The cuff can increase the venous blood flow by compressing the limbs. When one compression is completed, the system will start the next compression after waiting the predetermined venous fill time.



The system consists of the main unit, connecting tubes (supplied with the main unit) and cuffs for a single patient (to be purchased separately).

Product overview

Control panel



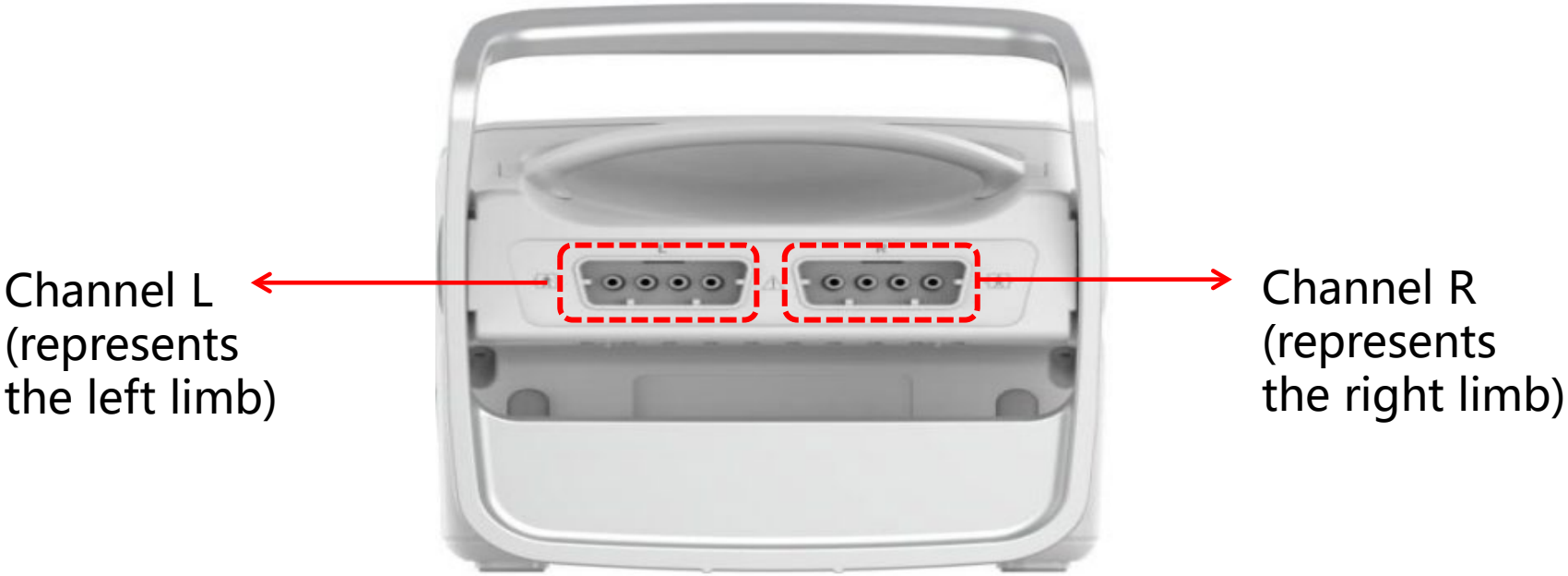
Product overview

Right side view



Product overview

Rear view



- The left and right channels each contain 4 cavities.
- The two channels are independent of each other and can be used independently or simultaneously



Part 2

Accessories connection

Accessories



040-001435-00
Silicone tube （150CM）

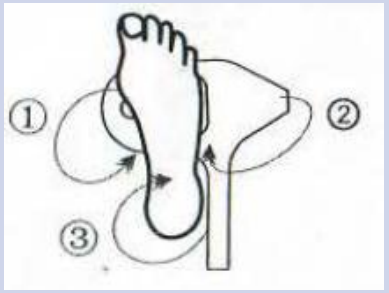
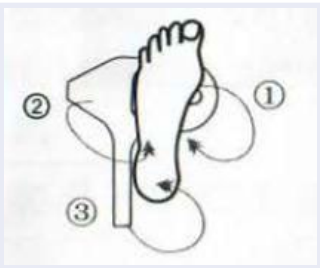
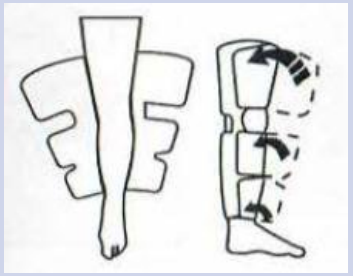


Reusable cuff(black)
(Service Life: 18 months, about 50,000 times)



Disposable cuff(white)
(Service Life: just used for one patient, about 5,000 times)

Accessories

Reusable Cuff	Appearance	Connection guide
Foot cuff (L) FM-03		
Foot cuff (R) FM-04		
Leg cuff FM-01		
Calf cuff FM-02		

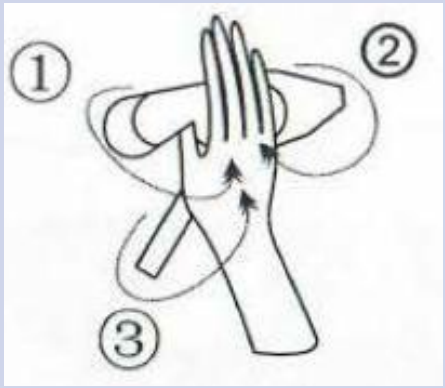
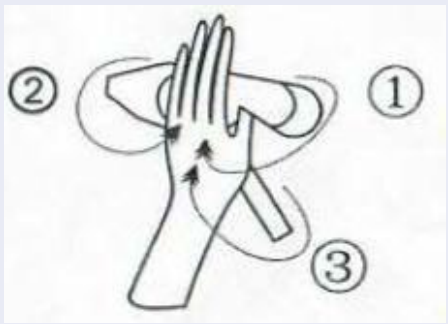
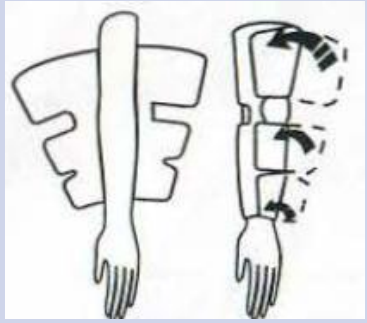








Accessories

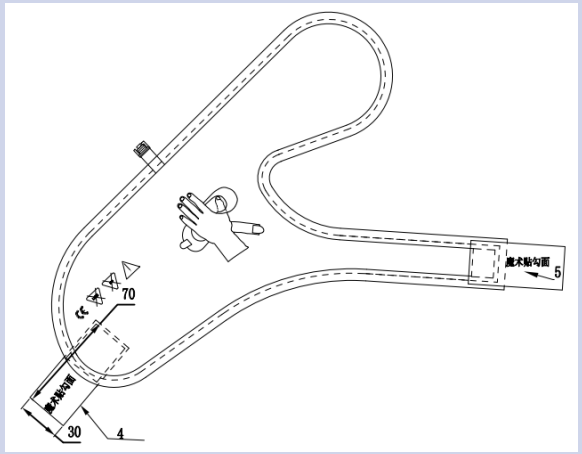
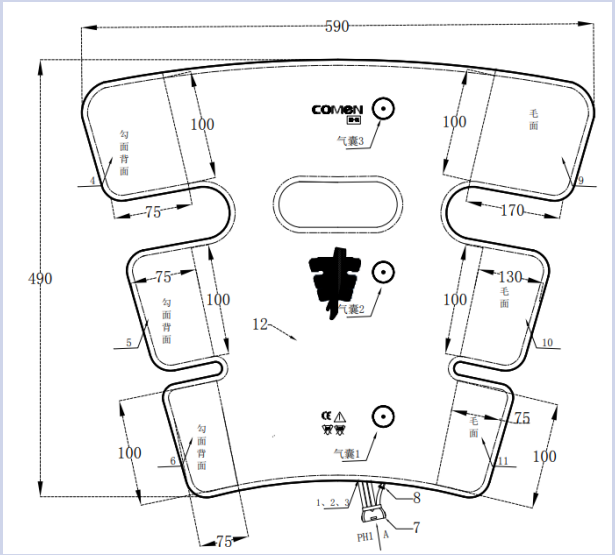
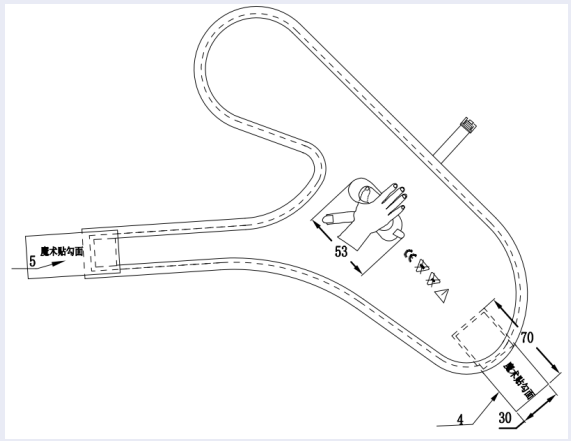
Reusable Cuff	Appearance	Connection guide
Hand cuff (L) HM-02		
Hand cuff (R) HM-03		
Arm cuff HM-01		



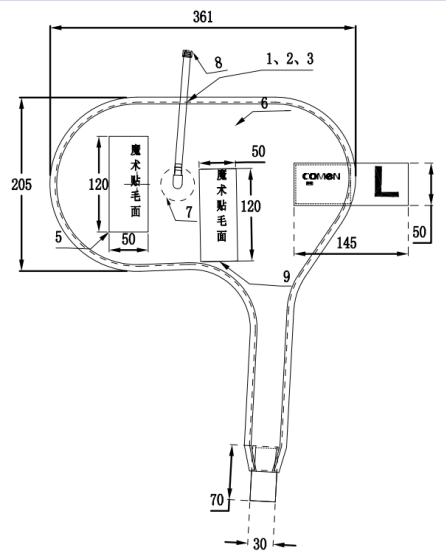
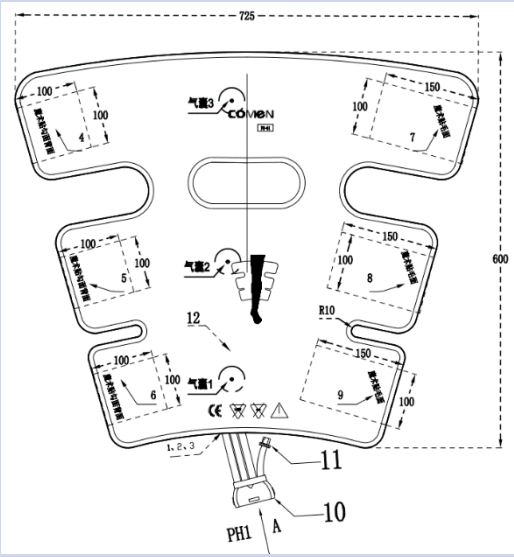
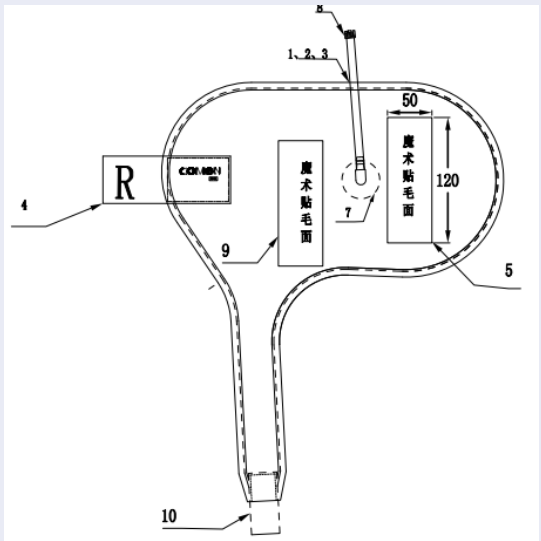
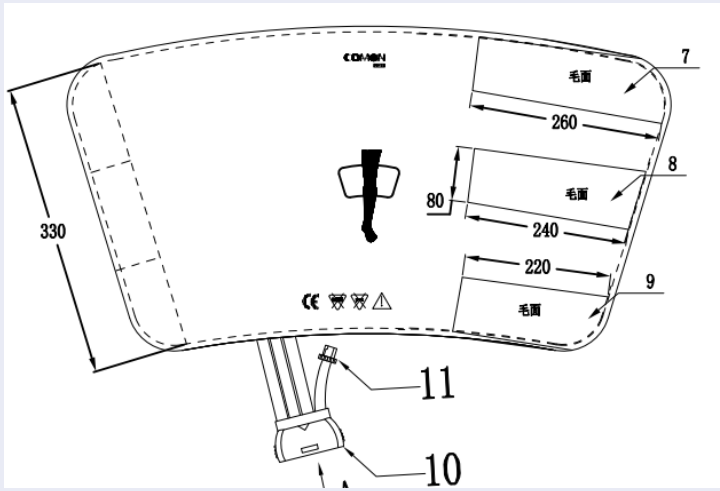




Accessories

Disposable Cuff	Appearance	Disposable Cuff	Appearance
Hand cuff (L) HO-02		Arm cuff HO-01	
Hand cuff (R) HO-03			

Accessories

Disposable Cuff	Appearance	Disposable Cuff	Appearance
Foot cuff (L) FO-03		Leg cuff FO-01	
Foot cuff (R) FO-04		Calf cuff FO-02	

Accessories connection













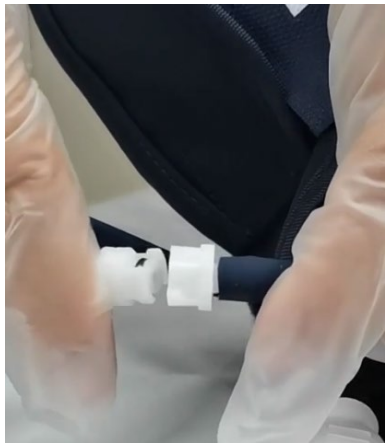
1. Fix the instrument beside the bed armrest or on the trolley
2. Connect AC power
3. Connect tube to the channel port.

Accessories connection



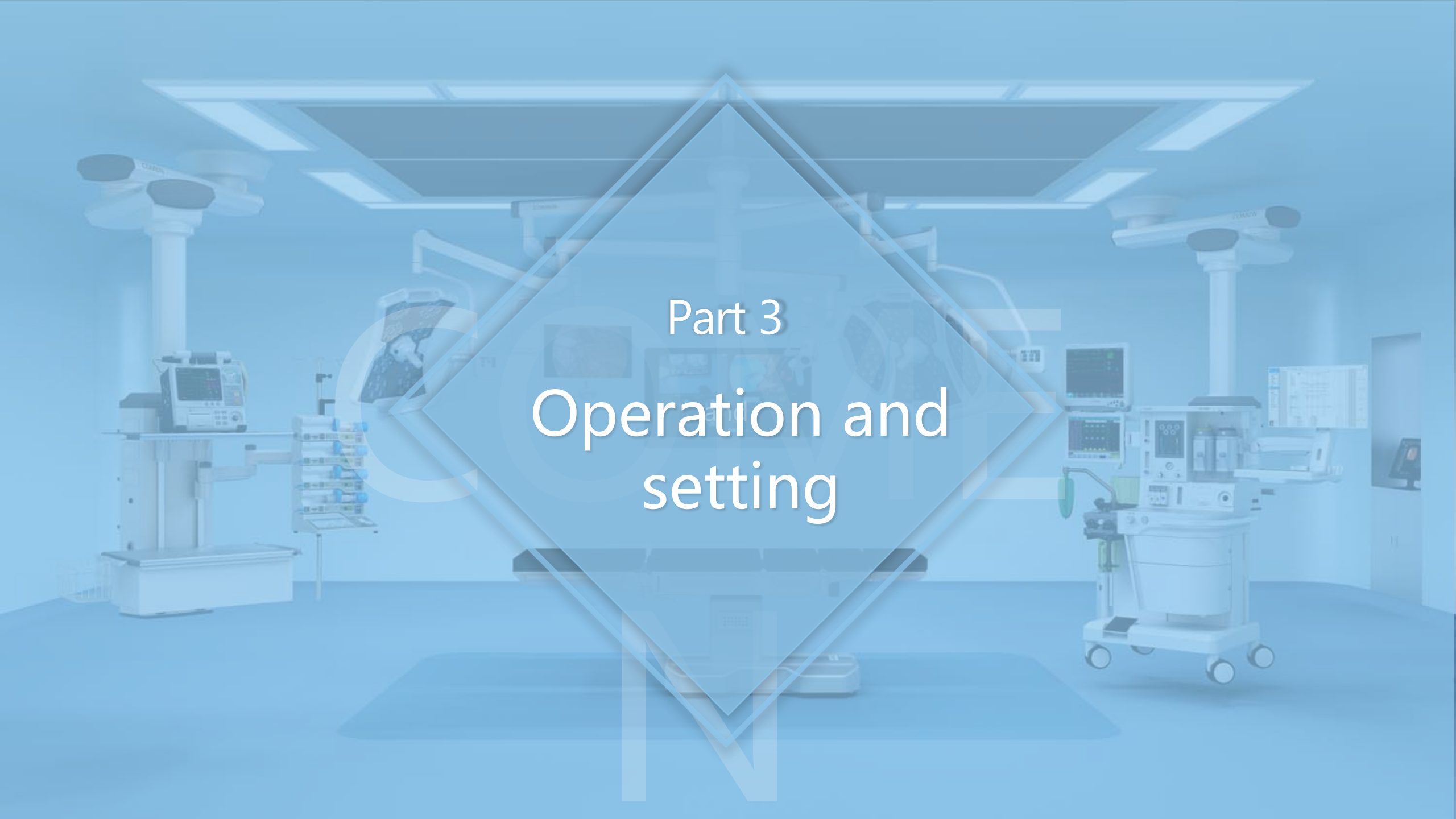








4. Connect tube and cuff. (Connect leg cuff and foot cuff)
5. Connect cuff to the patient.

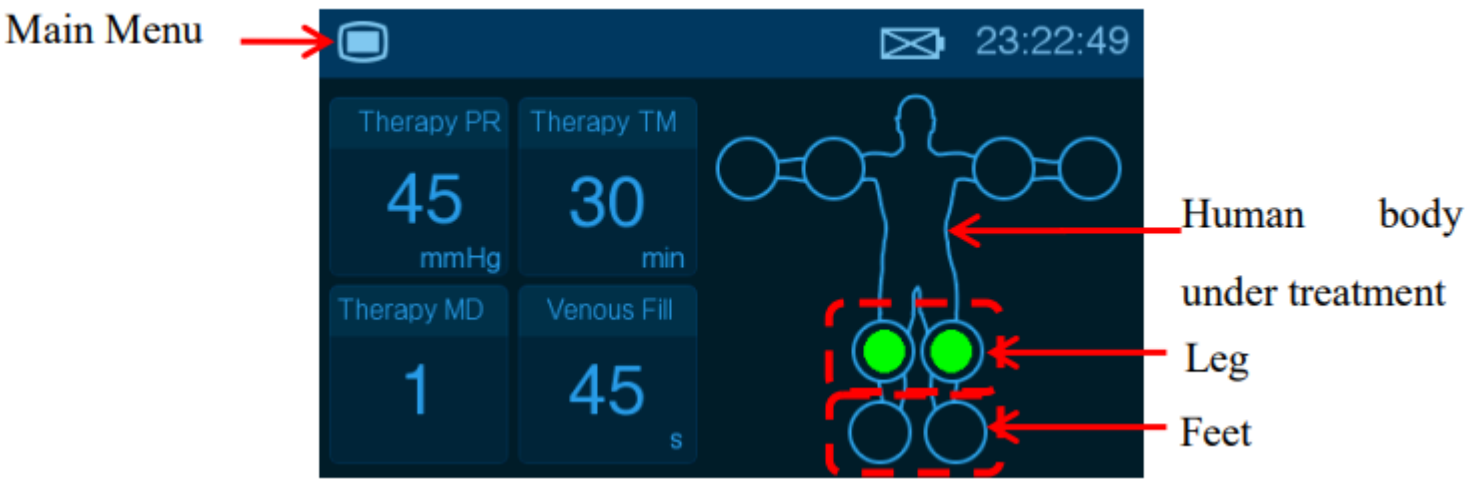


Part 3

Operation and setting

Operation and setting

Main interface



Hotkey area:

- Therapy pressure
- Therapy time
- Therapy mode
- Venous fill time

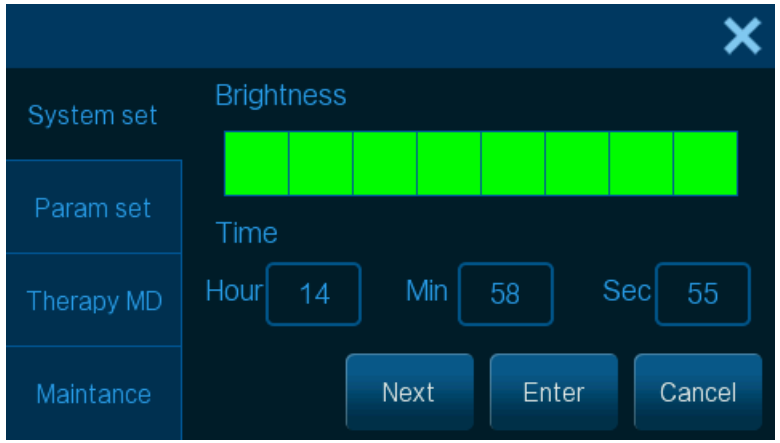
Dynamic state:
Select therapy area
(Can't select both upper and lower limbs)

Indication of selected areas:

Areas waiting for treatment:	Not highlighted
Areas already treated:	Highlighted
Areas under treatment:	Flashing display
The real-time therapy pressure is displayed on the bottom right of the screen.	

Operation and setting

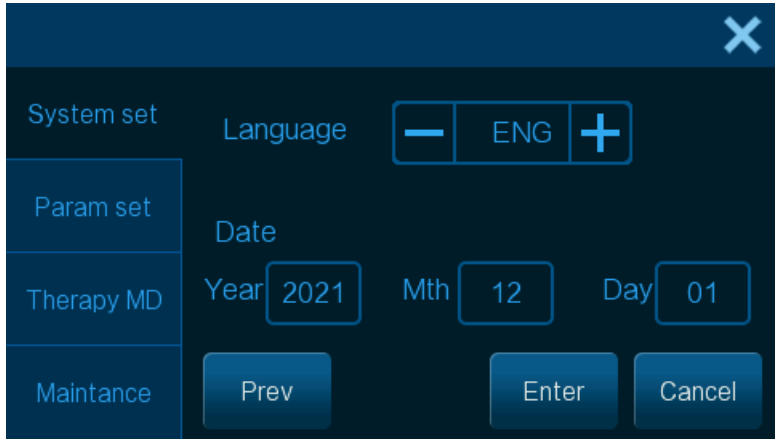
System setting interface



- Set screen brightness and time



- Set fault prompt volume and unit (mmHg or Kpa)



- Set language and date

Operation and setting

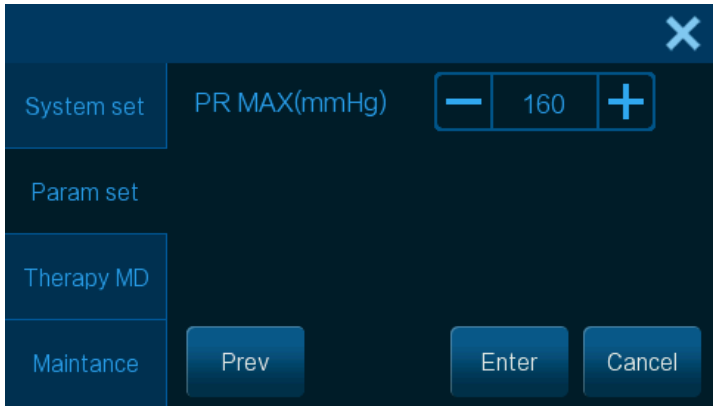
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Parameter setting interface



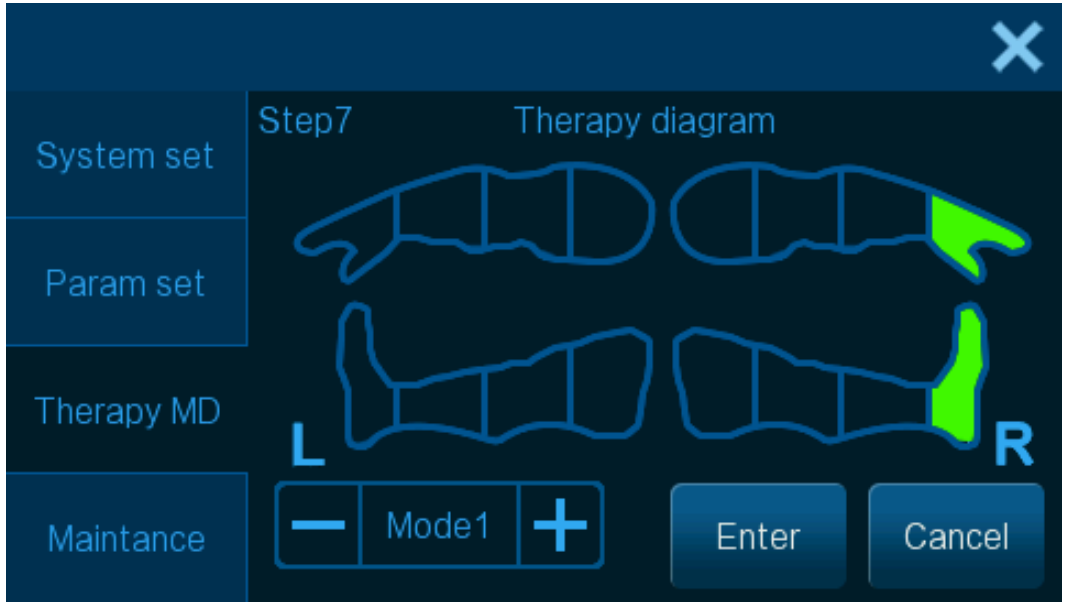




Description	The set range
Therapy pressure	75~280mmHg; Adjustable range: 5mmHg
Therapy time	10~600 minutes; Adjustable range: 30min
Pressure holding time	1~3 seconds; Adjustable range: 1 second
Inflation speed	1~6 (The higher the number, the faster it will inflate)
Venous fill time	20~70 seconds; Adjustable range: 5 seconds
Treat time step	10, 20, 30 minutes; (=Adjustable range of therapy time)
Maximum Pressure	160~280mmHg or 21.3~37.3KPa; Adjustable range: 5mmHg

Operation and setting

Therapy mode interface



mode：12+

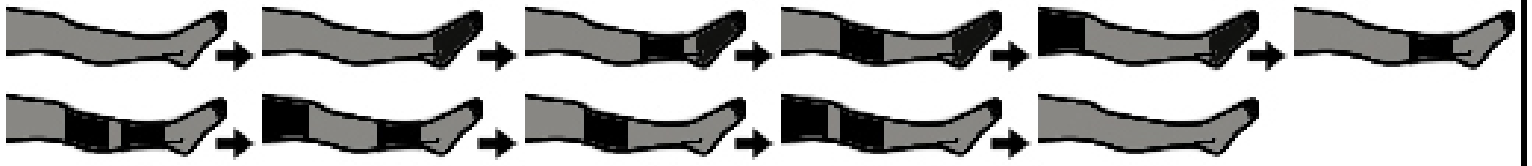
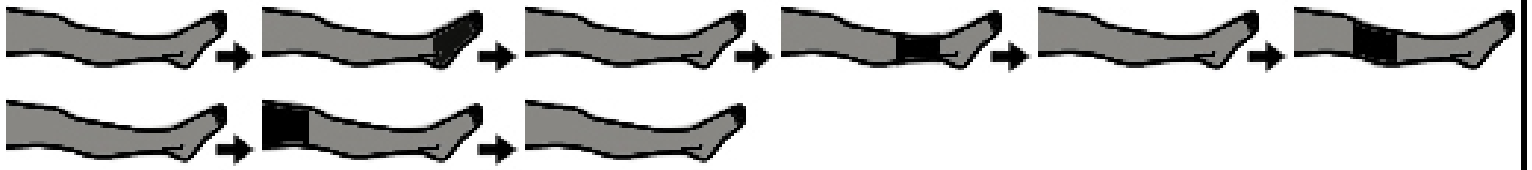
- 12 kinds of treating mode
- Self-define mode

Note: Setting method of custom mode: Click to select the part to be treated, and then press “Enter". The Self-define mode cannot be set as 1-12 mode, and the sequence of treatment can be changed freely.

Operation and setting

COMEN

Therapy mode

mode	Four air bag inflating mode
1	
2	
3	
4	
5	
6	
7	

Mode8: mode1+mode2 mode9: mode1+mode6 mode10: mode2+mode6

Mode11: mode1+mode4 mode12: mode1+mode7 Self-define: applies to local trauma

Operation and setting

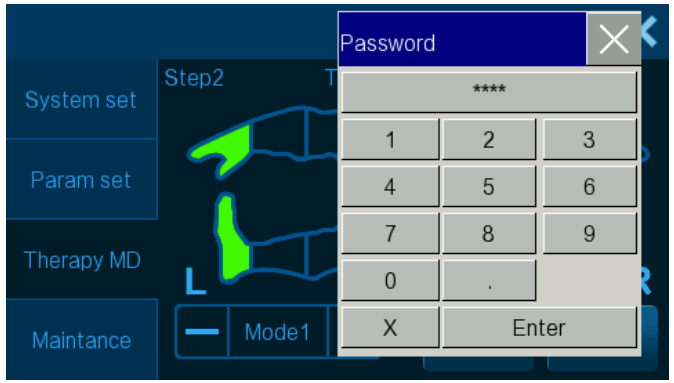
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Therapy mode recommendation

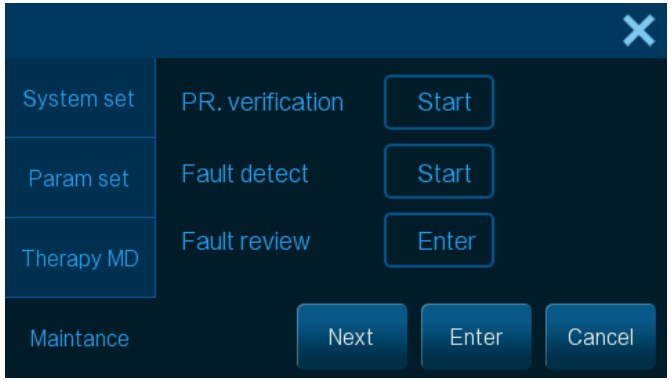
Therapy mode	Recommended treatment for disease
1, 8, 9	Prevention of venous thrombosis
2, 10, 11	Sequelae of cerebrovascular disease
3, 7	Patients with brain and spinal cord injury
4, 10	Postoperative rehabilitation
Self-define	It is suitable for patients who cannot apply direct pressure after local trauma or surgery
1, 5, 12	Prevention of pulmonary embolism PET
1, 2, 3, 11	Mild acute or chronic swelling of limbs
1, 6, 11	Nonobliterans
3, 7, 8	Intermittent lameness

Operation and setting

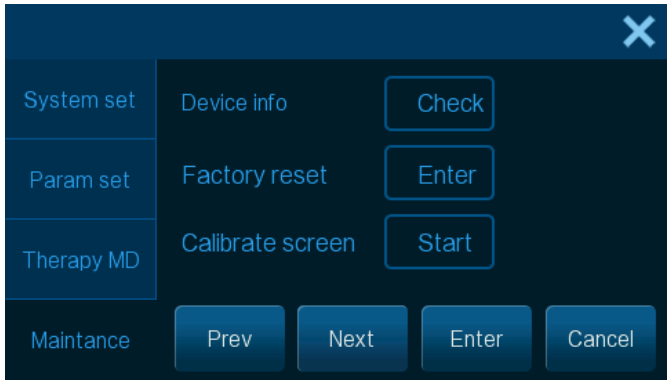
Maintenance interface



Password: 5188



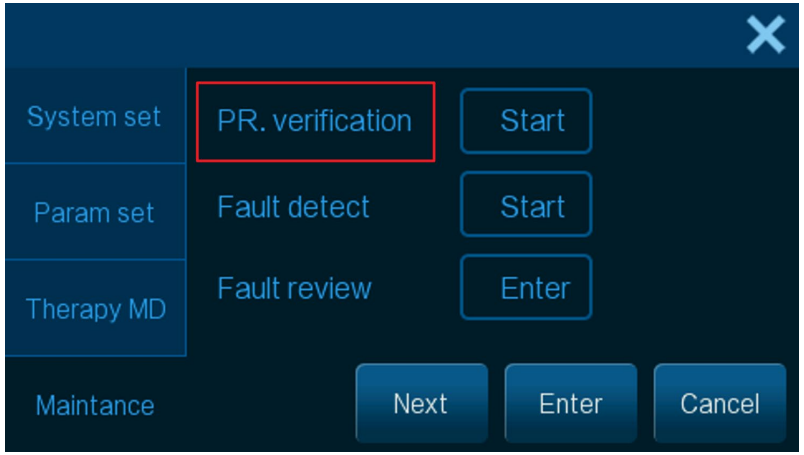
- Pressure verification: Access 160mmHg standard pressure source
- Fault detection: detect each channel in turn whether there is air leakage



- Device information: software version
- Calibrate screen (Another way to calibrate the screen: Long press the Start/Pause button to pop up the calibration screen interface)

Operation and setting

Maintenance interface



Below are the pressure calibration steps:

1) Connect a calibrated standard pressure gauge of 1mmHg or higher accuracy to channel L or channel R of the device.

2) Select [Maintance], and then click [Start] beside [PR. Verification] to start the pressure calibration. The system will inflate cuffs to 150mmHg automatically.

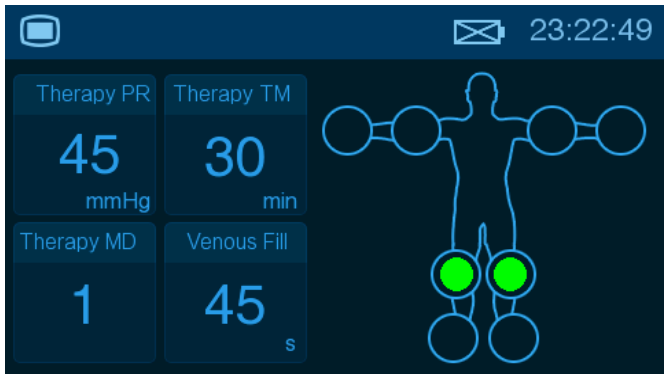
3) Compare the reading on the standard pressure gauge with the pressure value indicated on the device: the difference should not exceed 3mmHg (if the difference exceeds 3mmHg, contact our maintenance engineer for help).

Operation and setting

Steps of starting treatment



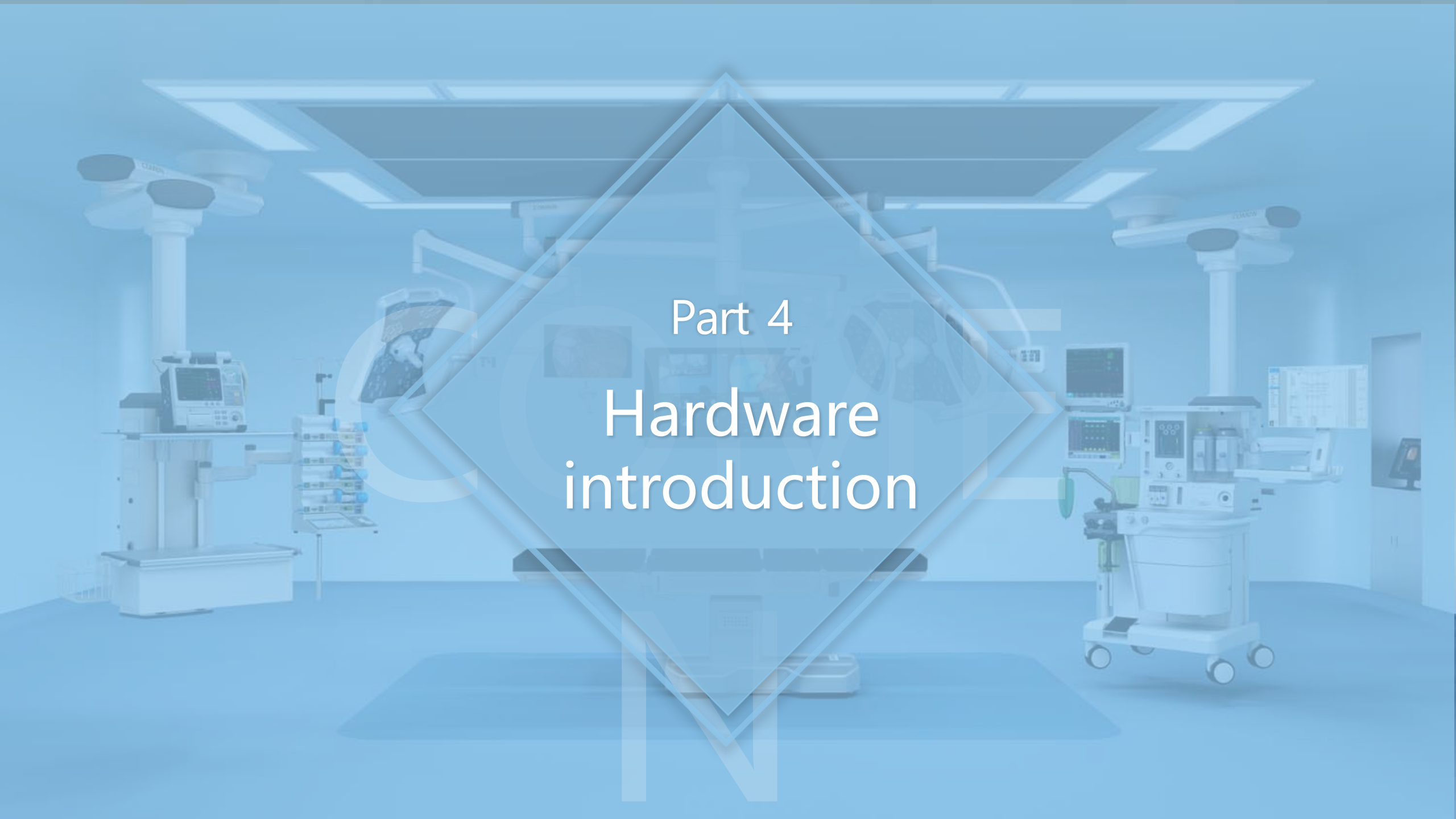






1) Connect cuffs to the patient.
2) Connect the cuff cable to the device.
3) Select a therapy mode based on the connected cuffs.
4) In the main interface, select the limbs to be treated.
5) Press the Start/Pause key to start the treatment, and the value of[Therapy TM] will start to count down.

- **The device provides two independent output channels, supporting simultaneous use of up to 6 cuffs.**
- **The cuff should be secured in such manner that no insertion of two fingers is allowed.**

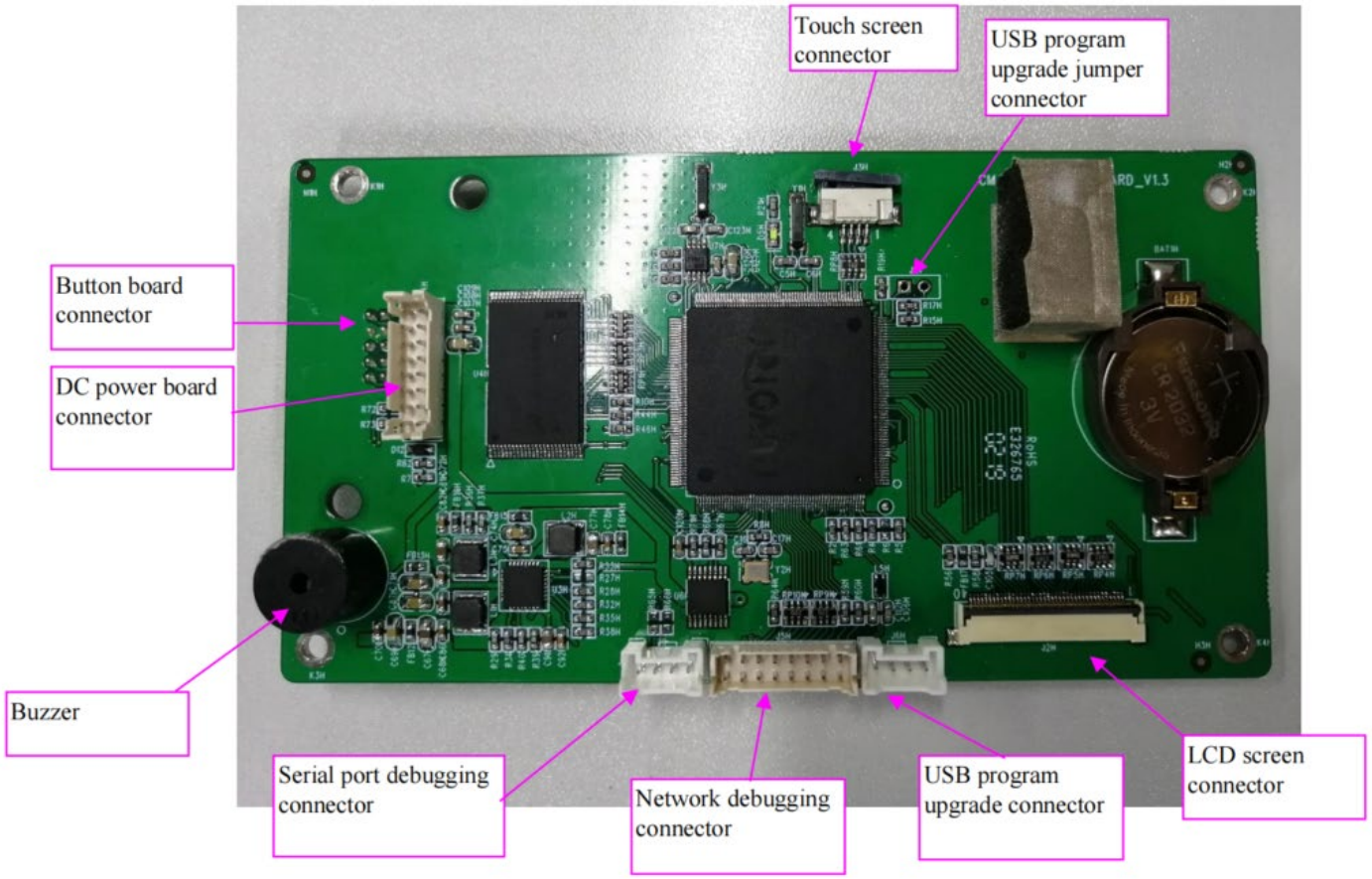


Part 4

Hardware introduction

Hardware introduction

Mainboard

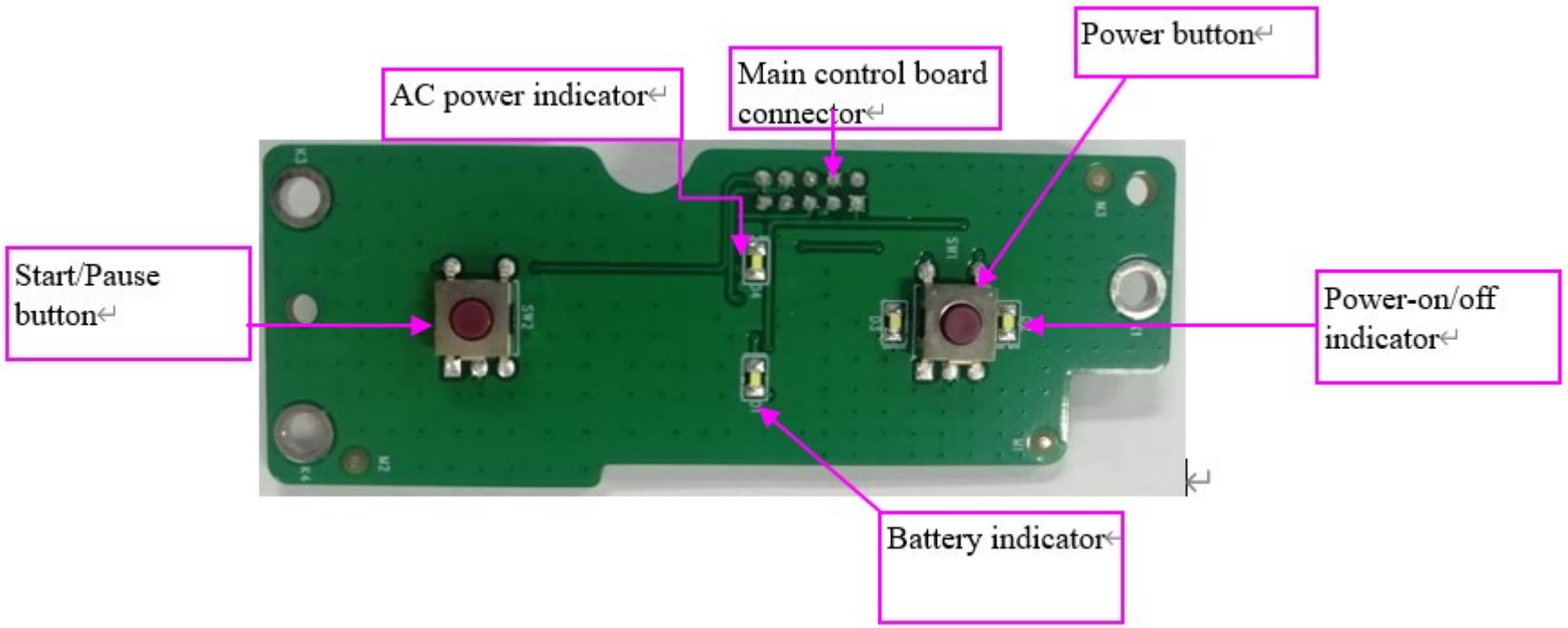


The Mainboard is the heart of the SCD600 machine. It is powered by the power board and implements the functions below:

- Receives data from the monitor board and transmits the data to the display.
- Receives signals of button pressing from the button board
- Controls the touch screen and buzzer

Hardware introduction

Button board



The button board implements the functions below:

- Exchange data with the mainboard
- Control the indicator light (AC power indicator, Battery indicator, power on/off button indicator)

Hardware introduction

Monitor board



Air valve component connector

Air pump connector

DC power board connector 1

DC power board connector 2

Pressure monitoring sensor

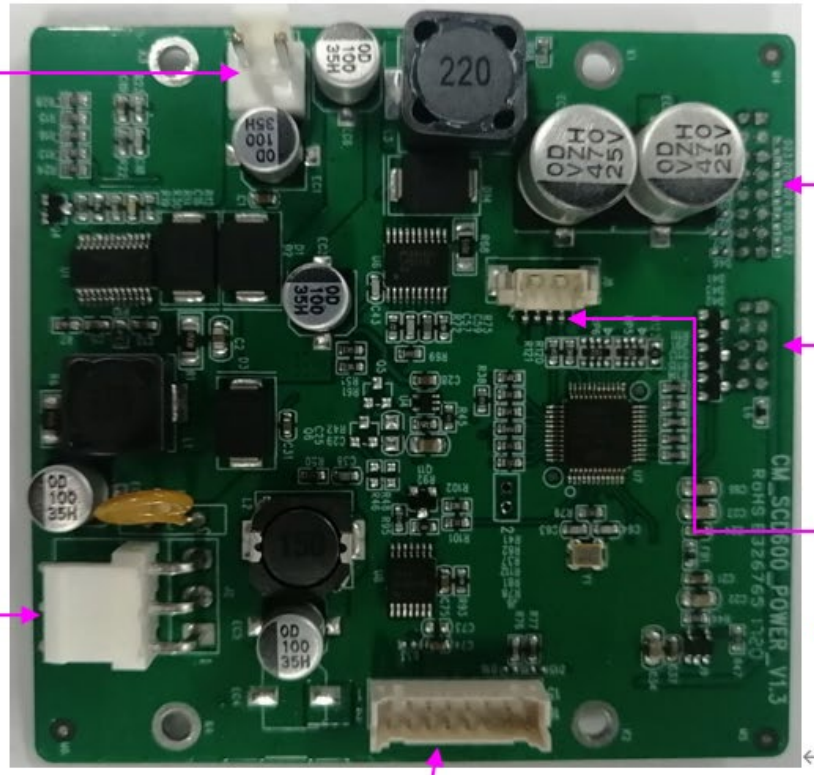
Hardware overpressure protection sensor

The monitor board implements the functions below:

- Control & Monitor all the parameter measurement &adjustment
- Control all electronics valves (air valve and air pump) and sensors (pressure sensor and overpressure protection sensor)

Hardware introduction

DC power board



The DC power board implements the function below:

- Receive the constant input voltage delivered by the AC power board or battery, and provides different DC voltages for the whole machine through the voltage conversion circuit.



Part 5

Troubleshooting

Fault message	Description of Fault	Possible Cause	Solution
System high PR	The system pressure is higher than 300mmHg	Twisting of connecting tubes	Check the patient's condition and whether the gas circuits are obstructed, and then start the treatment again. If the fault still exists, contact us for repair service.
System low PR	The system pressure is lower than 10mmHg	Leakage fault of gas circuits	Check the patient's condition and whether the gas circuits have a leakage problem, and then start the treatment again. If the fault still exists, contact us for repair service.
Abnrml high PR	The leg, foot cuff pressure is 10mmHg (or more) higher than the predetermined therapy pressure in 2 consecutive cycles.	The cuff is not placed correctly or connected reliably, or the gas circuit has a leakage fault.	Check the connection of each part or replace a cuff. If the fault still exists, contact us for repair service.
Abnrml low PR	10mmHg (or more) lower	Same as above	Same as above

Fault message	Description of Fault	Possible Cause	Solution
Low battery	Low battery power : the device will continue to work	Low battery power	Connect the device to AC power to charge the battery. If the fault still exists after 6h charging, contact us for repair service.
Severe low battery – About to shut down	Extremely low battery power: the shutdown time starts to count down.	Extremely low battery power	Same as above.
No limb TPY selected, Select limb TPY & start.	After pressing to start the treatment, the message appears	Before pressing to start the treatment, the limb to be treated is not selected on the interface.	Select the desired limb according to your needs, and then press the therapy button.
Accs disconnect, Chck lmb for nml tube connect.	After pressing to start the treatment, the message appears	Before pressing to start the treatment, there is no one-to-one corresponding connection to the selected limbs.	Connect the pipes one by one according to the selected limbs.

Fault message	Description of Fault	Possible Cause	Solution
Communication error-Shut down!	After the device is turned on, the message appears	Communication between upper and lower bits and serial port is interrupted.	Please press and hold the shutdown button for more than 10s to perform a forced shutdown, and then restart the device. If the fault persists, please contact the manufacturer for repair.
Gas circ #X leak-Check ext tubing for connect.	During the fault detection, the message appears	The external pipeline of X gas circuit is not connected.	Check the X gas circuit, whether the external pipeline is connected, and the connection is good. If the fault still exists, please contact the manufacturer for repair.
Gas circ #X flt -Check ext tubing for bends	During the fault detection, the message appears	The external pipeline of X gas circuit is folded or the pipeline is blocked.	Check the X gas circuit, whether the external pipeline is folded or blocked, or update the pressurized sleeve accessories and the air guide extension tube. If the fault still exists, please contact the manufacturer for repair.

Troubleshooting

Touch screen failures

Phenomenon	Possible Cause	Solution
Touch screen fails to be operated	It uses the resistive touch screen, and it requires the user to press with the fingertip or fingernail, which is different from the capacitive touch screen of a mobile phone	Use fingertip or fingernail to click the touch screen
	The touch screen needs to be calibrated	Long press the Start/Pause button to pop up the calibration screen interface
	The touch screen is completely defective	Replace the touch screen

Troubleshooting

Display failures

Phenomenon	Possible Cause	Solution
Black screen	AC power cable is not connected properly or battery failed to used.	Check if the AC power cable or battery is properly connected
	Power board is defective	Check the cable connection of power board; replace the power board
	Mainboard is defective	Check the cable connection of mianboard; Replace the mainboard
	LCD screen is defective	Check indicators are normal, Press the “Start/Pause” button to see if the device works, if works Replace the LCD screen

Troubleshooting

Display failures

Phenomenon	Possible Cause	Solution
White screen	Cable of LCD screen is defective	Replug the cable of LCD screen; replace the cable
	The abnormal voltage of the power board causes the mainboard to fail to operate normally	Use a multimeter to measure the output voltage of the AC power supply board. The output voltage should be around 5V. Replace the power board
	Mainboard is defective	Check the cable connection of mainboard; Replace the mainboard
	LCD screen is defective	Replace the LCD screen

Troubleshooting

Inflation failure

Phenomenon	Possible Cause	Solution
No response after pressing Start/Pause button (No sound)	Cable connection is loosen or bad	Check the cable connection of button board, monitor board, mainboard, power board; Replace the cable
	Button board is defective(Start/Pause button is defective)	Replace the button board
	Power board is defective	Replace the power board
	Monitor board is defective	Replace the monitor board

Troubleshooting

Inflation failure

Phenomenon	Possible Cause	Solution
Press the Start/pause button and there is no valve at the lower right corner	Monitor board is defective	Check the cable connection of monitor board; Replace the monitor board
	Power board is defective	Replace the power board
	Extension tube is bent or broken	Check if the tube is bent or broken; Replace the extension tube
	Air valve and air pump are defective	Replace air valve and air pump ((if a “click” sound is heard at the beginning of therapy, it indicates the air valve is in good condition).

Troubleshooting

Inflation failure

Phenomenon	Possible Cause	Solution
Repeated inflation	Occasional repeated inflation may be caused by the fact that the signals collected are inaccurate or that the measurement range is beyond the first inflation range	This is a normal phenomenon
	Check whether air leakage exists in the accessory	Check the accessories connection(tube and cuff)
	Gas circuit leakage inside the machine	Check whether the internal gas circuit is complete; the phenomenon is that value is displayed but is not stable during inflation, and it can be seen that the value declines.
	Monitor board is defective	Replace the monitor board

Troubleshooting

Inflation failure

Phenomenon	Possible Cause	Solution
The System High Pressure prompt is given as soon as inflation is performed	Tube is bent or pressed	Check the compression sleeve to see if the air guide tube and the air guide extension tube in the compression sleeve are pressed.
	Monitor board is defective	Replace the monitor board
	Air valve and air pump are defective	Replace air valve and air pump ((if a “click” sound is heard at the beginning of therapy, it indicates the air valve is in good condition).



Part 6

Care and maintenance

Care and maintenance

Daily check

1. Check whether the device and accessories are mechanically damaged.

2. Check whether the power cable is free from wear and has good insulation performance.

3. Check whether the function of the instrument is normal and ensure that the instrument is in good working condition.

4. Check the battery performance.

Care and maintenance

Clean

Device and accessories should be kept clean. Before cleaning, consult or understand the hospital's regulations on equipment cleaning. We recommend water, neutral soap and alcohol 70%.

Cleaning steps:

1) Cleaning steps are as follows: First, turn off the power and disconnect the power cord.
2) Use a soft cloth, adsorb appropriate amount of detergent, wipe the surface of the outer shell and accessories of the instrument.
3) Use a soft cloth, adsorb appropriate amount of detergent, wipe the display screen of the instrument.
4) Use a soft, dry cloth to wipe off excess detergent.
5) Place the equipment in a ventilated and cool environment to dry.

Care and maintenance

Disinfect

- It is recommended that instruments and accessories be sterilized only when necessary in the hospital maintenance plan.
- Please clean it before disinfect it.
- We recommend the use of isopropyl alcohol 70%, n-propyl alcohol 70%, glutaraldehyde 2%, hydrogen peroxide 3%, OPA (5.5g/L), sodium hypochlorite solution 0.5% disinfectant.
- The 0.5% disinfectant of sodium hypochlorite solution is not suitable for accessories.

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