

BS300

Vein Finder

User Manual

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1. BS300 Overview

1.1 Intended Use

The **BS300** is a portable instrument used as a supplement to appropriate medical training and experience, and help medical professionals to locate certain superficial veins.

- The **BS300** should not be used as the sole method for locating veins, and should be used by a qualified medical professional.
- When using the **BS300**, medical practitioners should always follow the appropriate medical protocols and practices which are required by their medical facility, to exercise sound medical judgment.
- The **BS300** can be used in the situation that the determination of vein location is necessary. When used properly, the **BS300** enables users to locate certain superficial veins in connection with medical procedures, such as venipuncture.

1.2 Product Description

- The **BS300** detects veins beneath the skin by using infrared light, then projecting the position of the veins on the skin surface directly above the veins.
- Qualified medical personnel can observe the displayed vasculature to find a vein of the right size and the location of superficial veins for venipuncture and other medical procedures.
- No training is required to operate the **BS300**.
- The **BS300** only shows superficial vasculature. The maximum depth of displayed veins varies by patients. In some situations, some patients' veins or the portions of their veins might not be displayed well or at all.
- The causes for the display that is less than optimal or lack of vein include, but are not limited to, vein depth, skin conditions (e.g. eczema, tattoos), hair, scarring or other highly contoured skin surface, and adipose (fatty) tissue.

- When held directly overhead, the **BS300** accurately locates the center of a vein. Increasing the displacement from directly overhead could cause a displayed vein position offset. The width of displayed veins may differ from the actual width, due to the physical differences of patients and the width of veins. The center line of the vein is accurate when the device is being used correctly in performing venipuncture or other medical procedures.
- The **BS300** requires no routine or preventative maintenance.
- The **BS300** is portable internally powered by battery and approved for continuous operation. The **BS300** is considered a Type I product and is not protected from ingress of water.

Visit our website for the most current information.

2. Warnings and Cautions

Pay attention to the following safety instructions (including, but not limited to) when using the instrument, to avoid the possibility of the damage.

2.1 Warning

- **BS300** contributes to find superficial vein location, but is not a substitute for sound medical judgment which is based on visual and tactile vein location and judgment skills.
- **BS300** should be used as a supplement for qualified professionals to determine the location of the veins.
- **BS300** only displays superficial vein. Due to the patient factors, the depth can be detected is limited.
- **BS300** does not indicate vein depth.
- **BS300** only displays superficial veins, and does not provide diagnostic information.
- Do not throw **BS300** external battery to fire, in case of explosions.

2.2 Caution

- The instrument must be repaired by authorized and qualified staff.
- Do not shine vein display light to the eyes for a long time.
- Keep the instrument clean and avoid oscillation.
- Keep the instrument dry and avoid any liquid flow into the **BS300** or its adapter and battery
- No high-temperature sterilization process. Do not use a beam of electrons or γ radiation sterilization.
- Do not use the electromagnetic interference or high-frequency interference in the vicinity of the device to ensure that the instrument is not the original environment of strong sources of electromagnetic interference, such as interference between wireless transmitters or mobile phones and the like.
- Check the device before using, make sure there is no apparent damage which could affect patient safety or performance of the instrument.
- Inspect the device every two months. If you find obvious damage, it is recommended to replace the damaged parts before use.
- The safety checks must be done by knowledgeable people who are executed by properly trained and usually have one or two years for testing and inspection procedures that specified by the public institutions.
- Check the safety-related labels are easy to identify. Verify that the device is functioning and consistent with description of the manual.
- Please return expired products to the manufacturer for processing or recycling, or processing scrapped the products according to local regulations for specification of electronic products.
- The proper disposal for used batteries should meet the specification of local regulations.

3. Product Basic Instructions

3.1 Product List

Product Name: BS300

No.	Name	Quantity
1	The imaging unit	1
2	Charging cradle	1
3	Battery	2
4	Power adapter	1
5	User's manual	1
6	Product certification	1
7	Warranty Card	1
8	Calibration Card	1



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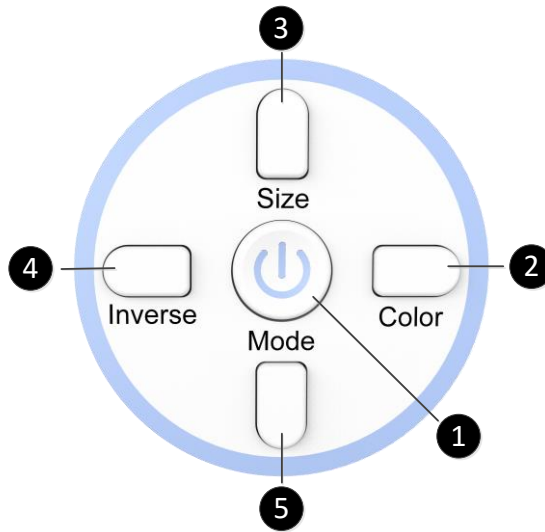


BS300

3.2 Appearance Description

Operation Panel

Image shape can be selected by the Mode button on the control panel.



- ❶ **Power:** Power button.
- ❷ **Color:** Change the displayed color.
- ❸ **Size:** Adjust the size of the projected image.
- ❹ **Inverse:** Transform projected image of the blood vessel becomes brighter, while the background is dimmed, vice versa.
- ❺ **Mode:** Toggles between the Universal and Fine detail mode.

Note: Inverse and size can be selected at Universal and Fine detail mode. If another mode is active, the former model will be replaced immediately.

Note: Universal: Standard picture mode for all patients.

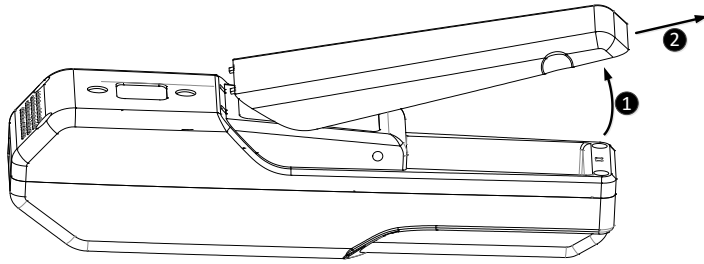
Note: Fine detail: Vessel for subtle observation, it is suitable for infants, children and some patients who need sclerotherapy.

4. Product Usage

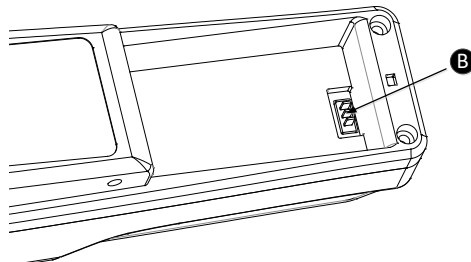
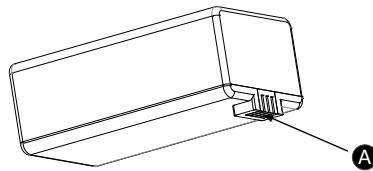
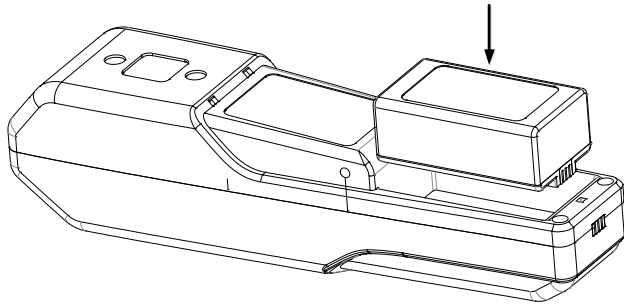
4.1 Power

(1) Insert the battery:

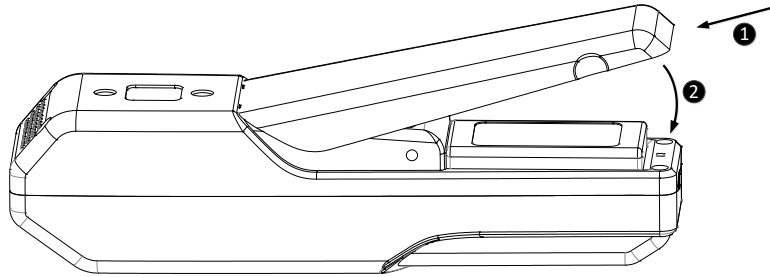
STEP1: Open the back cover of the host.



STEP2: Put the battery into the slot. Pay attention to ensure the correct direction-the bump (A) of the battery is in agreement with the groove (B) of the host.



STEP3: Load the back cover.



(2)Boot: Press the Power button and hold on 2 seconds then the BS300 will start.

Note: To ensure boot successfully, press and hold the power button 2 seconds.

Note: By default, the BS300 work with the power situation in Universal mode.

4.2 Focus

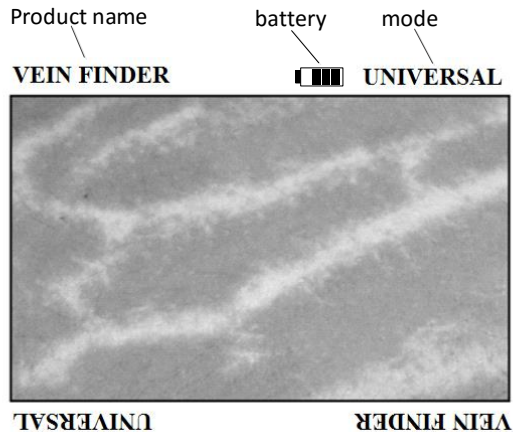
- Hold the imaging unit and place it directly over the observation area from about 7.87 inches (200mm).
- Turn the head to ensure that the window of the imaging unit is perpendicular to the observation area.
- Adjust the height slightly till the texts located at the edge of the image achieve the most clear. The focus is complete.

Note: The displayed vein might be thicker or thinner than the actual vein, because of the distance from the BS300 to skin, the patient physical differences and even the different observation modes. It is recommended that the judgment according to standard procedures and the experienced medical staff is priority in certain drug injection.

4.3 Projected Image Description

Projection display image

Projection display image is as shown below, wherein the text frame to display the current mode and battery information.

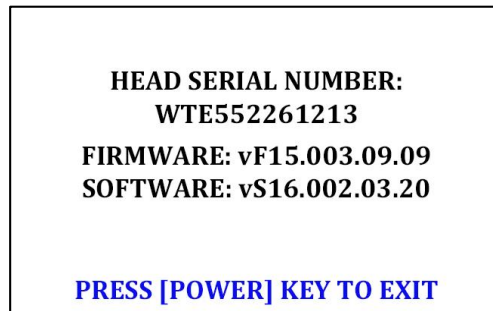


4.4 Shutdown

Press and hold the power button for 3 seconds until the display backlight is off.

4.5 Software Version

The software version of the **BS300** can be seen by pressing the Size and Inverse button on the control panel, as shown below.



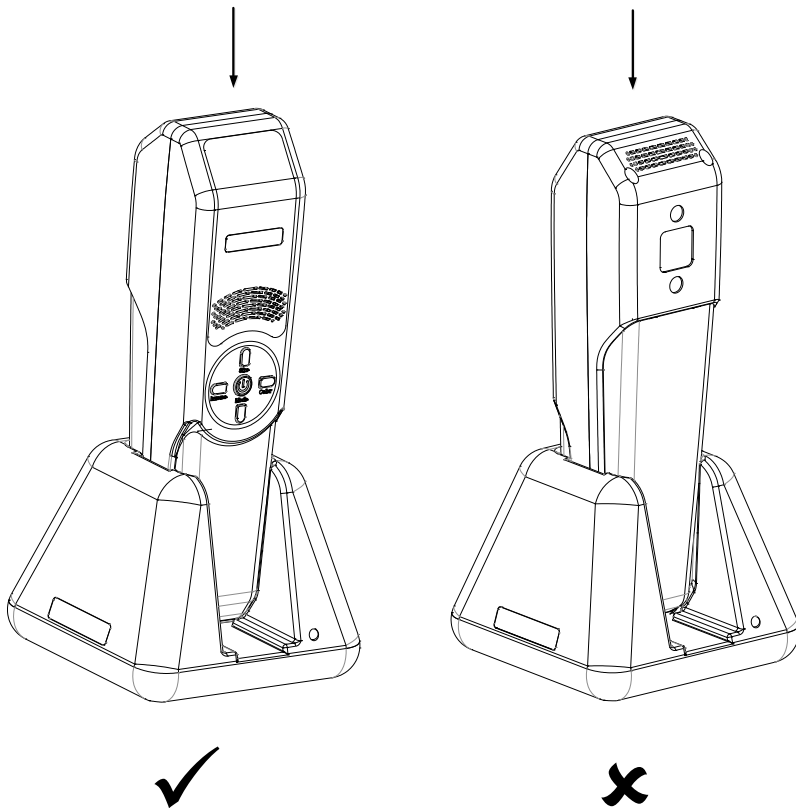
Press the Power button to withdraw from this projected image

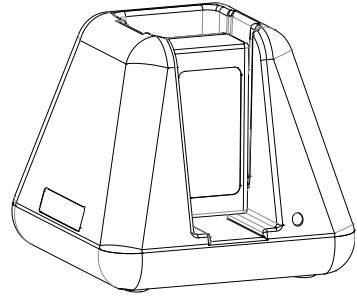
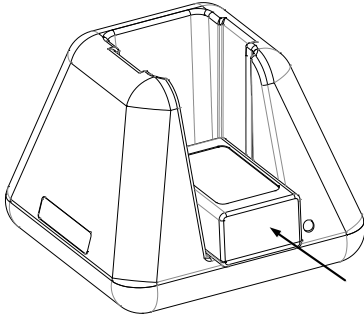
4.6 Charge

The power indicator is on the upper right corner of projection image. It needs to be charged or replace the battery when there is only a little power. The following is the charging step.

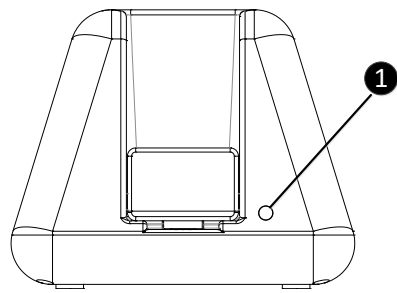
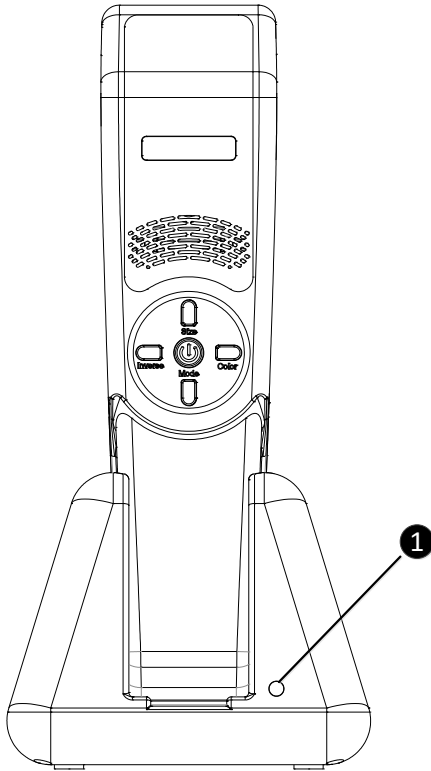
- (1) Connect the charging cradle and AC power with the adapter.
- (2) Put the host or the battery into the charging cradle.

Note: Pay attention to ensure the correct direction and incorrect operation will damage the machine.





(3) Determine the charging situation according to the indicator light.



When the indicator light **1** is red, the battery is not full of electricity, need to continue to charge. When the indicator light **1** turns green,

the battery is fully charged; it should be taken away from the charging cradle and can be used. When the indicator light **1** flash at the frequency of 0.5Hz, the battery temperature may be in abnormal level or the battery may be over discharge. Please check the battery and the charging cradle, and re-plug the adapter to eliminate the problem.

5. Warranty and Maintenance

5.1 Warranty

- The BS300 would display an alert or fault screen and turn off the vein display light, when detecting that it cannot operate properly.
- The BS300 should work in the temperature between 10 to 35°C. Malfunction would occur out of this range.
- When the BS300 is not operating properly, please use the Power button to turn off the device.
- If any unknown fault appears, please stop using the BS300 immediately. Then, turn off the device and contact our company support.
- Our company warrants the BS300. In period of one year after the purchasing date, the device is of sound materials, workmanship and conforms to the manufacturer's specifications.
- The warranty period for accessories is as follows: Charging Cradle – 1 year; Battery – 90 days.
- Our company will repair or replace any product free that does not satisfy these warranties within limitation of time. You must obtain a Return of Material Authorization (RMA) number from our company support. The repaired unit has a 90-day warranty from the date when it is received by the customer.
- These warranties are also void if the instrument is repaired by other than our company or an authorized agent.
- This is only a warranty coverage summary. Contact our company or

see our website for full details of warranty coverage.

Note: These warranties do not cover any misuse or abuse.

5.2 Limitation of Liability

- In no event shall either our company or the customer be liable to the other for any incidental, indirect, special or consequential damages (including without limitation lost profits or lost business opportunity).
- The foregoing limitation shall apply regardless of the form of the claim that such liability may be asserted, including breach of contract, tort (including negligence) or otherwise.

5.3 Common Faults and Solution

No.	Symptom	Reason	solution
1	Boot no display	No battery	Insert battery
		The battery has run out	Charged or new battery replacement
2	Cannot boot	system error	1.reboot after shutdown 2.reboot after reload battery 3.contact manufacturers maintenance

Note : If you find other faults and cannot be solved, please contact the manufacturer or the local authorized dealer Maintenance.

6. Technical Specifications

6.1 BS300 Specifications

Parameter	Specification
Weight	350g
Dimensions	60x60x240mm
Accuracy	0.25mm
Depth of Visible Vein	≤12mm
Battery	Replaceable Li-Ion 3.7V 4,400mAh
Battery working time	5 hours
Charging time	3 hours
Voltage requirements	100-240V(AV), 0.4-0.6A, 50-60Hz
Peak wavelength of infrared light	About 850nm
Valley wavelength of visible light	About 530nm
Operating temperature	+10 °C to 30 °C
Workplace stress	700hPa to 1060hPa
Working humidity	0-90% (non-condensing)
Storage humidity	0-90% (non-condensing)
Storage temperature	0 °C to 60 °C