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# 1. Vein Finder Overview

## 1.1 Intended Use

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

## 1.2 Product Descriptions

- The **VeinSight™** vein finder detects veins beneath the skin by using infrared light, then projecting the image 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.
- The **VeinSight™** vein finder only shows superficial vasculature. The maximum depth of displayed veins varies by patients.
- The causes for the different depths of display that are 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 **VeinSight™** vein finder accurately locates the center of a vein.

- The width of displayed veins may differ from the actual width, due to the physical differences of patients and the width of veins. But the center line of the vein is accurate.
- The **VeinSight™** vein finder is portable internally powered by battery and approved for continuous operation.
- The **VeinSight™** vein finder is not protected from ingress of water.
- No training is required to operate the **VeinSight™** vein finder.
- The **VeinSight™** vein finder requires no routine or preventative maintenance, but needs regular cleaning.

## 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 Warnings

- **VeinSight™** vein finder 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.
- **VeinSight™** vein finder should be used as a supplement for qualified professionals to determine the location of the veins.
- **VeinSight™** vein finder only displays superficial vein. Due to the patient factors, the depth can be detected is limited.
- **VeinSight™** vein finder only displays superficial veins, and does not provide diagnostic information.
- Do not throw **VeinSight™** vein finder to fire, in case of battery explosions.
- **VeinSight™** vein finder don't include components which the customers can maintain. All components should be purchased from the authorized department.

- Please use the original charging equipment to charge the device, which can avoid the potential risk.
- The safety could decrease when using the unofficial accessories, so please only use the official accessories.

## 2.2 Cautions

- **VeinSight™** vein finder 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 **VeinSight™** vein finder or its adapter.
- No high-temperature sterilization process. Do not use a beam of electrons or  $\gamma$  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.
- 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 people who are executed by properly trained and usually have 1 or 2 years for testing and inspection procedures that specified by the public institutions.
- Check the safety-related labels easy to identify. Verify that the device is functioning and consistent with description of the manual.
- The service life for the device are five years (from the production date). To proper dispose the used device please contact the distributor or the manufacturer, or meet the specification of local regulations after the expiration date.

### 3. bs300 Instructions

**bs300** is a portable model of the **VeinSight™** vein finder. **bs300** is lightweight and equipped with high-capacity rechargeable lithium battery. Medical staffs can hold it easily to assess and locate the patient's vascular. For convenient operation, different types of supports can be chosen to fix **bs300**.

#### 3.1 Product Components

**bs300** is composed by the main unit and charging cradle, the main unit is the imaging unit to project vein image. There are optional supports for **bs300**. The mobile and fixed supports can be chosen to support the device.

#### 3.2 Product List

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



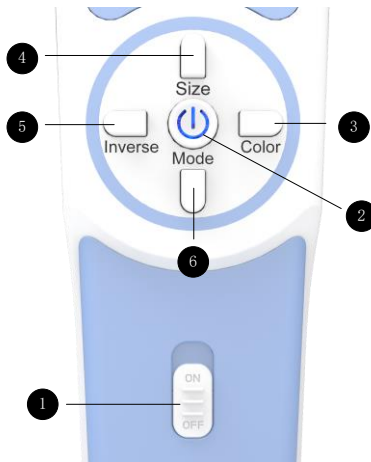
**The imaging unit**



**bs300**

## 4. Product Usage

### 4.1 Operating Instructions



❶ **Main Switch:** Switch to “OFF”, the device is power off. Switch to “ON”, press Power button, the device is power on and can achieve functions when you press the appropriate buttons.

❷ **Power:** Power button.

Boot: Press Power button for about 0.5 seconds, until the instrument "beep" twice, then the **bs300** will be power on.

Off: Press Power button more than 2 seconds, until the instrument "beep" twice, the Power button indicator lights off, the instrument shut down.

Standby: When device is power on and the projector is illumed, by short pressing the Power button (less than 0.5 seconds), the device will go to standby mode and the projector will be turned off.

Wake Up: When device is in standby mode, by short pressing the Power button (less than 0.5 seconds), the device will beep and the projector will be illumed

❸ **Color:** Button to change color.

There are five projection colors to choose. The colors are Natural, Cyan, Green, Red, Blue. The default color is cyan.



- ④ **Size:** Button to adjust the size of the projected image.  
There are three projection sizes to choose, full size, 2/3 size and 1/2 size. The default size is full size.
- ⑤ **Inverse:** Button to change the brightness contrast.  
Projected image of the blood vessel becomes brighter, while the surrounding tissues become dimmed. The projection of the blood vessel is dim by default.
- ⑥ **Mode:** Button to change mode.  
Short press Mode key (about 0.5 seconds) can achieve different brightness switching. There are 3 degrees of brightness. Long press (about 2 seconds) can achieve switching mode between universal mode and fine detail mode. Boot defaults to the second tranche of brightness and universal mode.
- Note:** Inverse and size can be selected at universal and fine detail mode. If one mode is active, the former model will be replaced immediately.
- Note:** Universal: Standard picture mode for all patients.
- Note:** Fine detail mode: Find the smaller and deeper veins.

## 4.2 Focus

- Hold the imaging unit and place it directly over the observation area from about 7.87 inches (200mm).
- Turn the imaging unit 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.

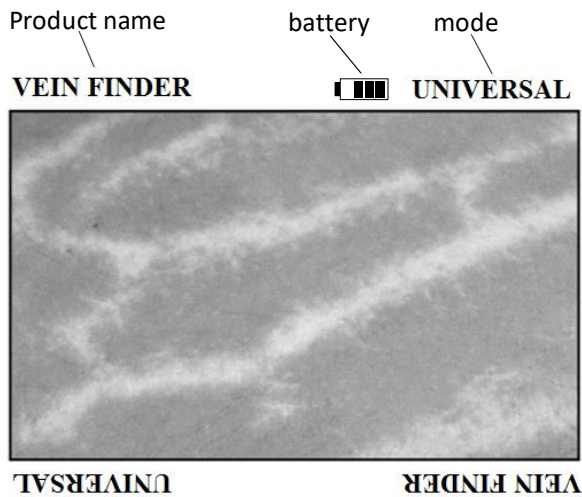
**Note:** The displayed vein might be thicker or thinner than the actual vein, because of the distance from the **bs300** to skin, the patient physical differences and even the different observation modes. It is recommended that the judgment according to standard procedures and the experienced

medical staff is priority in certain drug injection.

## 4.3 Projected Image Description

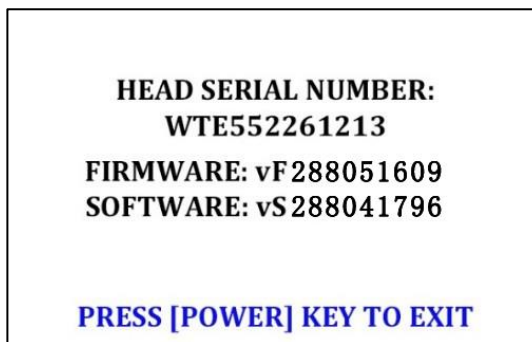
### Projection display image

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



## 4.4 Software Version

The software version of the **bs300** can be displayed by pressing the Inverse and Color button on the control panel, shown as blow.



Press the Power button to withdraw from this projected image.

## 4.5 Charge

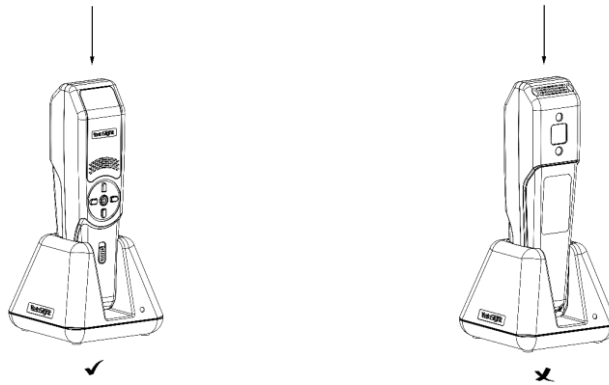
- The unremovable battery is inside the imaging unit.
- Please fully charge the battery before using it at the first time.
- Please avoid fully discharge, it is better to charge the battery before using up.
- When battery is in the protected mode because of short circuit or over discharge, please charge the battery to recover it.
- Inspect the fraction of charging and discharging every two months, if there is any problem, please contact the distributor or manufacturer.
- The proper disposal for used batteries should meet the specification of local regulations.
- Please use the original adaptor to charge the battery.

**Note:** When the power is less than 3%, the instrument "beep" continually. Short press any button (about 0.5 seconds) can eliminate the sound. If reboot the device, the "beep" sound will remind again before the battery charged.

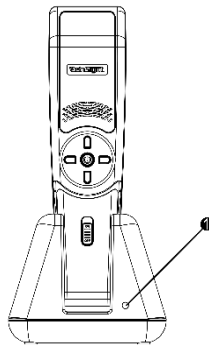
The power indicator is on the upper right corner of projection image. The device needs to be charged when there is only a little power. The following is the charging step.

- (1) Connect the charging cradle and AC power with the adapter.
- (2) Put the imaging unit into the charging cradle.
- (3) When the indicator light is red, the device is being charged.

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



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



When the indicator light **1** is red, the battery is not fully charged, need to continue to be charged. When the indicator light **1** turns green, the imagine unit / battery is fully charged; it is recommended to take away the imagine unit from the charging cradle. When the indicator light **1** flash, the battery temperature may be in abnormal level or the battery may be over discharge. Please check the device, the charging cradle and the power adapter, and re-plug the adapter to eliminate the problem.

## 5. Cleaning, Storage and Transport

### 5.1 Maintenance

- Please avoid to immerse the device in any liquid or remain liquid on it.
- Don't pressurizing or heating the device for sterilizing.
- Don't clean **bs300** when it on support. Please take it off before cleaning.
- Please unplug power cable and make sure **bs300** is off before cleaning.
- The lens window needs cleaning for every months. Please use dust-free cloth and concentration of 95% alcohol to wipe it, then dry it naturally or use dust-free cloth to dry it.
- Clean the device every two months, please use the disinfectant wipes for medical surfaces or dust-free cloth to dip concentration of 95% alcohol to wipe the device, then dry it naturally or use dust-free cloth to dry it.
- Don't use other organic solvent and rough cloth to wipe any part of the device to avoid damage.
- Please use the calibration card to inspect the accuracy of the projection every time before using. If there is evident deviation between the projection and the cross mark on the calibration, please stop to use the device and contact the distributor or manufacturer to maintain it.

**Note:** **bs300** needs periodic inspection. Please follow the requirement of the institutions to clean and sterilize the device every time before using.

**Note:** If there is abrasion or dirt on the lens window, please don't use **bs300**. If the window is damage, please contact the distributor or manufacturer to maintain it.

**Note:** Please follow the instruction to clean the device and avoid to scratch the lens window.

**Note:** Please follow the warning as above to clean **bs300**, if not, the device could be damage.

## 5.2 Storage and Transport

- When reserving and transporting, don't place the device in somewhere the temperature and humidity is too high or too low, or the dust is heavy.
- Please meet the requirements of reserve and transportation. The requirement is as below: humidity: 0-90% (non-condensing), temperature: 0°C to 60°C.
- Please take the device away from the flammable and explosive gas source and take care to avoid impact or vibration when transporting.
- The proper disposal for packaging should meet the specification of local regulations or the country's environmental protection regulations.
- After long-distance transportation, please inspect the projection by the calibration card before using it.

## 6. Warranty and Maintenance

### 6.1 Warranty

- The **bs300** should work in the temperature between 10°C to 30°C. Malfunction would occur out of this range.
- When the **bs300** is not operating properly, please 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: The imaging unit – 18 months, Battery – 6 months.
- 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.

**Note:** The warranties do not cover any misuse, abuse or natural disasters.

## 6.2 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.

## 6.3 Common Faults and Solutions

Symptom	Reason	Solution
Boot no display	battery run out	Charged battery
	Power error	Reboot after restart main switch
Cannot boot	System error	Reboot after shutdown
		Reboot after restart main switch
Display no image	Operation error	Reboot after restart main switch

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

## 7. Technical Description

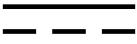










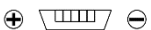





### 7.1 bs300 Description

Parameter	Specification
Weight(the imaging unit)	480g
Dimensions(the imaging unit)	60x60x240mm
Accuracy	0.25mm
Battery	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 to1060hPa
Working humidity	0-90% (non-condensing)
Storage humidity	0-90% (non-condensing)
Storage temperature	0°C to 60°C



## 8. Symbol Definitions

### 8.1 bs300 Symbol Definitions

	DC power
	Caution
	Manufacturer
	Date of manufacture
	Operating instructions
IPX0	Waterproof and dust levels, do not have waterproof and dust capacity
	Can't be abandoned with the life garbage (The EU directive of waste electrical and electronic equipment identification)
	Contact number of manufacturer
	Warning
	General warning mark
	Please refer to User Manual
SN	Serial number
EC REP	European Representative
	Main unit interface
	Charging cradle interface
	Fragile, please take care
	No rain, keep dry
	Up direction
	No turning over
5	The limitation for stacking layers is 5
	Packaging can be recycled