

# **BIO BS6000**

*Portable Vein Imaging Instrument*

## **User's Manual**

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## Product Principle and Application:

The infrared light as kind of invisible light widely exists in nature; Such as sunlight, heater etc. Hemoglobin in the blood absorbing infrared light is different from other organizations; Hemoglobin in subcutaneous blood vessels will absorb more infrared light, while absorption by other organizations are less, so that we can distinguish the blood vessels and other organizations in infrared images . Infrared image is taken by infrared camera, after optimization and highlighting the color & shape by professional image processing software, then output the pictures on the screen, we can clearly see the subcutaneous vascular distribution, location, direction, etc. During infusion and bleeding , medical staffs can easily to find blood vessels , to improve efficiency and reduce the patient's pain.

## [Applicable range and contraindications]

This product is applicable to assist observation and search for subcutaneous blood vessels, no definite contraindication.

## [Product Specifications]

Product model: BS6000

Dimension ( head ): 155 x49x38mm (length\*width\*height)

Dimension(Main body): 183x131x38mm (length\*width\*height)

Best imaging distance : 140-180mm

Imaging depth : 10mm

Minimum vein detection diameter: 0.2mm

Display: 7 inches, screen resolution 1280x960

Infrared light source wavelength: 850nm

Camera lens: 6 mm

Power dissipation : 6 W

Adapter input voltage: AC ~ 220 v

Battery capacity: 7600 mah

Battery working time: 7 hour

Weight (net weight) : 0.62 kg



[Instrument Head]



Instrument head structure diagram

1- camera and infrared LED 2- handle 3-Orientation mark

[Main Body]



Instrument body structure diagram

4- Display screen 5 – power switch 6 – charging port

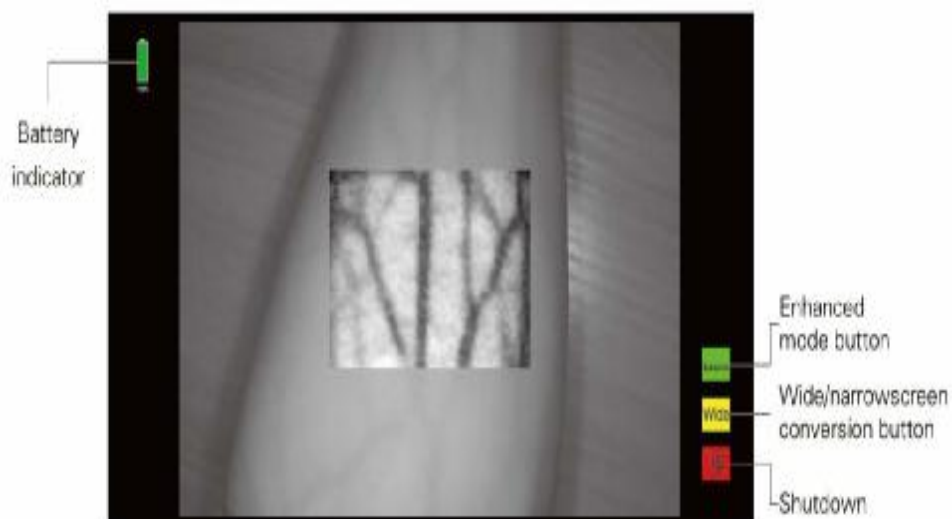
## Operation

1. Open the package and take out the instruction manual. Please read this section first.
2. Take out the machine and put it on the table. To make it easy for operation, BS6000 Vein Imaging Instrument can be held in hand, and also can be installed on desktop bracket; adjust head clamp manually to suitable position and angle for operation (See the complete assembly diagram of the instrument body and bracket on page 5).
3. Touch the power switch for about 1-2 seconds, turn on the instrument, wait for about 5 seconds system will open software automatically, enter in angiograph software interface and the device gets ready for work.
4. Make observed part 140-180mm below infrared illuminant which is the best observation distance , venous vascular distribution can be shown on the screen after stabilization . When the head is pointed at the target area, the red orientation mark will be displayed in the target area, which is the center position of the lens, and the red mark moves in the direction of moving the image.
5. The top left corner of the screen is a display of battery capacity .In the lower right corner of the screen, there are three buttons, the enhanced mode button, the wide/narrow screen conversion button, and the shutdown button.

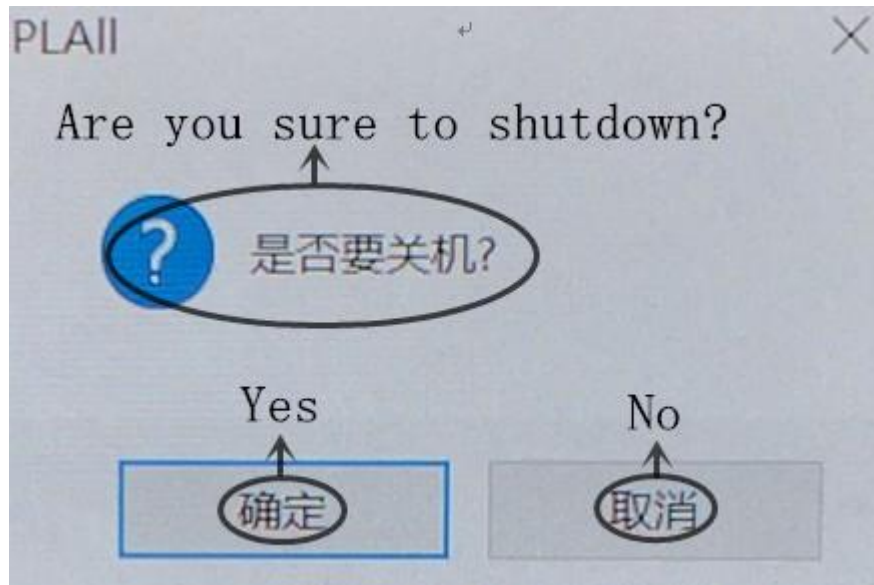
Enhanced button: the default is enhanced mode (image is processed to highlight blood vessels), turn off and turn to normal image mode;

Wide/narrow screen conversion button can be used to adjust the image display size on the enhanced mode for different requirements;

Shutdown button: close the device.



Shutdown:



Complete assembly diagram of instrument main body and bracket



### [Attention ]

1. Please read the instruction manual carefully before using the instrument. Connect the power adapter of the instrument to the DC charging port, and remove the power adapter when charging is completed. Then directly using the preset cell to observe and find the subcutaneous blood vessels.
2. The device allows medical personnel or trained personnel to operate.
3. This instrument can be used for venous puncture on the surface of skin that is scarred, tattooed, birthmark, or hairy.
4. Please ensure that the supporting bracket and instrument are stable on the table

while using, and avoid shaking the instrument .If the angle of the light source is changed during operation , please wait till the patient's vein image is clear, then venous puncture can be carried out.

5. Rated voltage: 4.2 V.

6. The device is used and stored at room temperature.

7. This instrument is not suitable for use in the case of stronger direct sunlight target.

8. The equipment shall not be installed, uninstalled or copied any software or documents.

### [Warranty]

1. Product warranty is one year . Due to improper use, such as scratches and impacted , is not covered by the warranty. Without permission, non our company employees shall not open the machine, otherwise it will not be guaranteed for free repair.

2. Graphic Description: Manufacture Date details on instruction manual

### [Statements]

Standard: GB 9706.1-2007

《 Medical Electrical Equipment First Part : Safety General Purpose》

Warranty period: 12 months

Date of production: see the label

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