

BF-500A/B/C

Doppler FHR Detector

OPERATION MANUAL

(2.0 edition)



Be careful



Environment: +10°C—+40°C



Waterproof



Up not more than 4 floors

IPX4 Splash proof

Add: Rm.1802, Tower A, Pengdu Building,
Donghua Garden, Guimiao Rd.,
Nanshan Dist.518054, Shenzhen,
P.R.China

Tel: 0755-26713783/26713784

Fax: 0755-26495167/26713783

Web: www.szbestman.com

Email: bestm@public.szptt.net.cn

BESTMAN INSTRUMENT CO., LTD

I、 Summary of unit

Model **BF-500A/B/C** Series **Doppler** Fetal Heart Rate (**FHR**) Detectors apply the ultrasonic Doppler principle to detect the fetal heart beat. The units are compact, lightweight, easy to operate and are stable in performance and have high dependability. The units come complete with dual power supply or a built-in rechargeable battery or dry cell.

Model **BF-500A/C** has an additional unique function whereby the users can transmit the fetal heart beat signals to a Tele-Monitor Centre provided there is a phone connection.

II、 Specification:

- Frequency: $2.0 \text{ MHz} \pm 0.2 \text{ MHz}$
- Intensity: $\leq 10 \text{ mW/cm}^2$

- Power: 9.6V rechargeable battery
- Work time: >5H
- Operating temperature limit:
+10°C~+40°C.
- Automatic power off limit: <3 minutes
- FHR detecting limit: 50-210bmp

III、 Function:

- Detect the FHR after twelve weeks of pregnancy
- Detect the umbilical cord blood flow

IV Equipment components

1. Blue backlight LCD FHR and functions Display
2. Phone connection indicator (for BF-500A/C) and charging indicator(for BF-500A/B/C)
3. Volume higher
4. Volume lower
5. Power ON/OFF
6. Working indicator


Remedy: Ensure proper connection.

- There is an interference source in the local vicinity.

Remedy: The **DOPPLER** unit must be relocated away from the interference source.

6. Possible cause:

No dial tone can be heard whilst dialing The phone number. It fails to connect with the Tele-Monitor Centre.

- Dial without pressing 

Remedy: press the 

- Earphone problem

Remedy: check function

- Problem with the apparatus

Remedy: have it checked

***NOTICE:** Do not drag the probe on the abdomen wall or change the probe direction to improve effect whilst listening to the fetal heart beats.*

Remedy: Recharge the **DOPPLER** unit sufficiently to eliminate flashing of the LED.

- There is no coupling between the probe and abdomen wall.

Remedy: Ensure sufficient gel is installed between the probe and abdomen wall.

- The probe is not located in the optimum position.

Remedy: determine optimum position with experience



- The patient's abdomen muscle suffers nervousness by application of strong pressure of the probe on the abdomen wall.

Remedy: Use proper pressure on the patient to ensure sound connection of the probe.

1. The display unit is not stable while unit is working.

Possible cause:

- The Probe cable connection to the **DOPPLER** unit is faulty.

7.  Net connection (for BF-500A/C)
8.  Phone connection (for BF-500A/C)
9. REDIAL (for BF-500A/C)
- 10..Phone dialing Key (for BF-500A/C)
- 11.Jackfor telephonenumber(for BF-500A/C)
12. Jack for adapter
- 13.Jack for microphone (for BF-500A/C)
14. Jack for probe cable

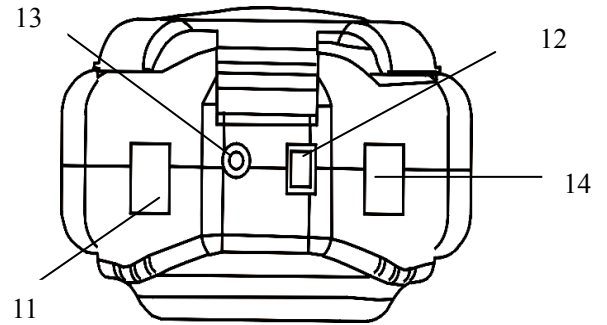


fig.1

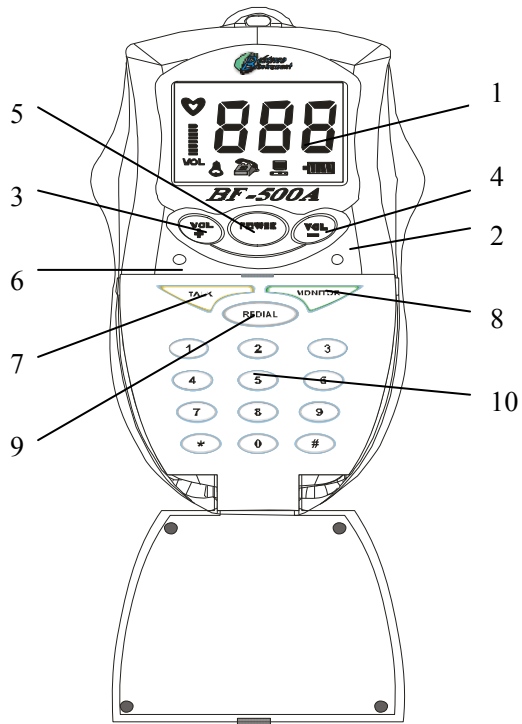


fig.2

and should be replaced.

2. **Power & charging indicator is bright but sound is incomplete.**

Possible cause:

- The power in the recharge battery or dry cell has been depleted.

Remedy: Recharge the rechargeable battery or replace the dry cell.

The volume is set too lowly

Remedy: Adjust the volume up.

- The probe cable connection is poor The unit circuitry has malfunctioned.

Remedy: Return the unit to the supplier for repair.

3. **The noise is beyond comfortable listening and sensitivity of the unit is low.**

Possible cause:

- The internal battery is near depletion of power.

Remedy: Recharge the rechargeable battery or replace the dry cell.

- When connecting the adapter, the depleted power condition is not corrected.

Remedy: Check the adapter unit for proper connection first and then for loose connections if problem persists.

- The DOPPLER unit has sustained damage.

Remedy: Contact the agent.

4. DOPPLER unit can work normally but the recharging LED is dimly lit.

Possible cause:

- The 220V AC socket is damaged.

Remedy: Have the socket replaced by a qualified technician.

- The adapter fails to work properly.

Remedy: Have the adapter checked by a qualified technician or replace it.

- The charging LED indicates low charge, but charging is normal.

Remedy: The Charging LED is faulty

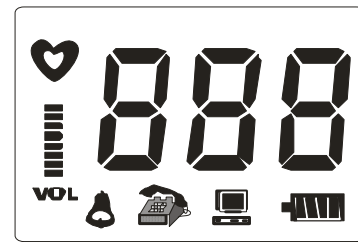












fig.3

-  Power or charging indicator
-  Warning of abnormal FHR
-  Net connection indicator (for BF-500A/C)
-  Phone connection indicator (for BF-500A/C)
-  Fetal heart beat indicator
-  Volume adjustor indicator
-  FHR Display

V、 How to transmit the FHR to the Tele-Monitor Centre via a telephone line (for BF-500A/C)

1. Connect the telephone line and microphone to the apparatus, find out the optimum position for listening to the fetal heart beat clearly and put on the microphone;
2. Open the cover and press the  Button;
3. Dial the phone number;
4. After phone contact is made, request the Tele Monitor Remote Centre to make connection to the Net;
5. Press the  button and the fetal heart beat signal will be transmitted to the Tele Monitor Remote Centre.

Instructions:

1. The Phone Connection Indicator turns bright while the phone is connected and the  is displayed. (for BF-500A/C)
2. Press the REDIAL button if the phone does not make contact immediately.

Take care to ensure that no coupling gel, water or any other substance is allowed to leak into the probe. Please use carefully as the probe is not covered under warranty. When the probe is not being applied to the patient, move it lightly to ensure the noise level is kept to a minimum.

- An operating temperature between +10°C and +40°C should be maintained.
Caution: Do not attempt to recharge the 9V cell, or it may cause damage or injury.

IX Determining if function of DOPPLER unit is abnormal**Malfunction indicated by:**

5. **LED fails to light up/ sound is ineffective.**

Possible cause:

- The power in the recharge battery or dry cell has been depleted.

movement will be registered on the display
Important: After use, ensure the unit is turned off (If not, it will be turned off automatically 3 minutes later). Clean the gel of probe by gently wiping and then re-affix the probe to its mounts. If the LED display becomes dim or sound reduces significantly, the DOPPLER unit should be recharged immediately. If using a 9V dry cell then this should be replaced with a new one.

Recharging method:

Connect the adapter to the main power supply followed by connecting the Doppler unit. The charging indicator LED will light normally. After about 8 hours it is required to bring the unit to full charge. **For the first time charging should be 12-16 hours.**

VIII、 Attention

- Apply coupling gel to the probe when in use and clean it off when finished with.

3. When the phone is off and there is no communicating function by the sender during transmitting, but the fetal heart beat sound can still be heard. It ensures the optimum fetal heart beat signal is being transmitted to the receiving side.

VI How to use the unit

1. Disengage the probe from the probe mounts carefully and drag the probe head upward;
2. Switching unit ON/OFF is done by pressing the Power ON/OFF button alternately;
3. Press the Power button to start the unit and initiate the DOPPLER;
4. Smear coupling gel on the probe and place the probe lightly on the pregnant woman's abdomen;
5. Locate the optimum position for listening clearly to the fetal heart sound – this is usually just below the mother's umbilical cord.

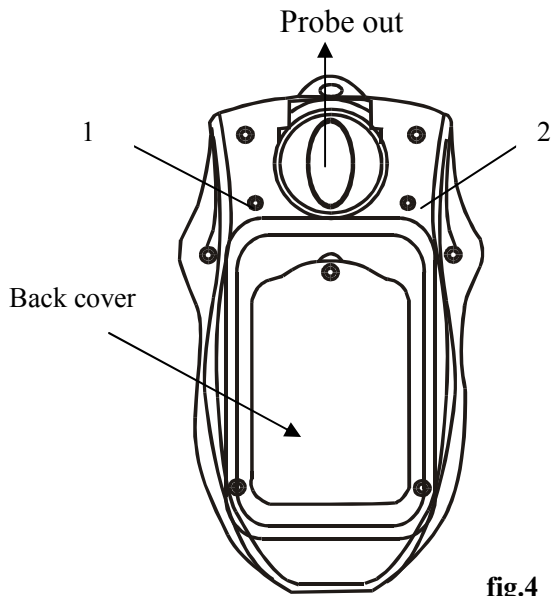


fig.4

1. Ringing buzzer (BF-500A/C)
2. Reset button: while the apparatus does not work normally, please press the Reset button to restart it.

Notice: At the optimum position it ensures that application of the probe is done lightly without dragging on the abdomen and without any further creation of noise. If the fetal sound is too strong, adjust the sound level down by repeated pressure of **3** until the desired level is obtained. Similarly press **4** where an increase in sound level is required.

VII、 Affirm the fetal heart

Model 500A/B/C: After the sound level has been stabilized, the FHR is obtained from the digital sound beeps counted for a specific period.

Model 500A/B/C: After the fetal heart sound has first been heard, five heart beats (several seconds) are counted, then FHR is read from the digital display. Any subsequent change in the fetal heart beat