

MILLENNIUM

Operation Manual

SF822B Blood Pressure Monitor

- Welcome to use MILLENNIUM Microcomputer Blood Pressure Monitor Series.
- Please read the Manual carefully before use so as to operate the Blood Pressure Monitor correctly.
- Please retain this manual for future reference.

Foreword

Hypertension (High Blood Pressure) is one of the three major diseases that are of great danger to mankind. It is known as the INVISIBLE KILLER. The higher the blood pressure, the higher the incidence of the heart disease or incidental cerebrovascular (apoplexy) disease. Therefore, early diagnosis as well as prompt treatment of hypertension is of great significance.

Attention:

Hypertension could cause the narrow of arterial blood vessels or the obstacle in twig blood circulation, which shall cause the difference of blood pressure values between wrist blood pressure and upper arm blood pressure. Even for healthy persons, the difference between wrist and arm blood pressure values might be about 20mmHg (2.5Kpa). So, please do not judge your blood pressure by yourself and consult your doctors.

Blood pressure values change is the same by measuring wrist or upper arm. Therefore, one can monitor the change of his blood pressure values by measuring wrist blood pressure. Blood pressure changes throughout the day and even without feeling, body blood pressure will change ranging from 30mmHg-50mmHg according to body tension or relaxation state.

About Blood Pressure

Blood pressure is the pressure exerted on the arterial walls when blood flows through the arteries. The pressure exerted when the heart contracts and sends out blood is called systolic (highest) pressure. The pressure exerted when the heart dilates and blood flows into the heart is called diastolic (lowest) pressure. Blood pressure is a physiological index subject to wide fluctuations, which might be influenced by talk, movement, posture, mood, etc., and possesses the property of periodical change throughout the day. And therefore, using different body

parts for measurement (such as wrist or upper arm), different blood vessel wall thickness as well as different measurement time will probably generate different measuring results.

SF822B

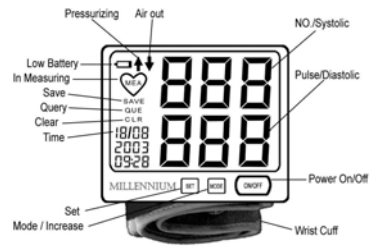
It uses the Oscillometric method of measurement and automatically pressurizes and measures blood pressure and is capable of displaying minor changes of the blood pressure measured. It also has saving function and can save pulse, blood pressure values and measured time.

**Special Features of SF822A Microcomputer
Wrist Blood Pressure Monitor**

- All in one compact unit and easy to be portable.
- **Memory function for storing 30 measurements for 3 persons including measured time, total 90 memories.**
- Query function to view saved pressure data available, helping you constantly monitor your blood pressure.
- Display time and date (year, month, day, hour and minute).
- Clear function to erase saved data available.
- **Super large LCD display and easy to read.**
- User friendly operation and automatically pressurize cyclically.
- Automatically shut off function after two minutes upon finishing measurement.

Name of Each Part

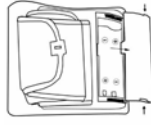
Host Set



Operation Guide

Batteries Installation

1. Remove the battery compartment cover as illustrated by sliding the cover in the direction of the arrow.
2. Insert the batteries as per the polarity indicated inside the compartment.



3. Replace the battery cover.

Caution:

1. Please remove batteries when unit is not in use for extended periods.
2. Replace promptly with new batteries in case low battery indicator is displayed on the LCD (must be two NEW AAA size batteries of the same brand).
3. Please use **only alkaline batteries** instead of rechargeable ones.

Please replace batteries in case of the following circumstances:

1. A battery symbol appears on the Display while in use as illustrated.
2. Nothing appears on LCD screen when unit is turned on.



Time Display and Set

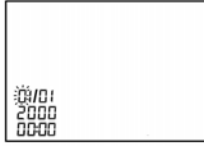
1. Time Display

When the unit is on, the system can display time and date except for query and save mode. Day/Month, Year is in the left lower corner of the screen such as 18/01 2004 09:28. In QUE mode, displayed time is measured time of these measurements.



2. Time Set

Time can be set after the batteries are replaced. At this time, MODE key is time set key "+" and can not be used for other functions.



The detailed time set process is as following procedures.

Turn on the unit after replacing batteries.

The screen time display is 01/01 (day/month), 2000(year) and

00:00(hour: minute). Moreover, the first character of "day" is flashing and by then "day" can be set by pressing MODE/+ key.

After pressing set key to confirm, the second character of "day" can be set Day/month set can be set cyclically. Upon finishing set "year" and pressing SET key, if day/month and

year set is correct, the system will automatically transfer to

"hour" set (the first character of "hour" is flashing.) At this time,

hour and minute can be set cyclically. The time set will finish

after pressing SET key and the system will automatically enter

waiting command status.

If day/month/year date set is incorrect, for example, 31/02



2003, the screen will display "EE". Please power on the unit and re-set time.

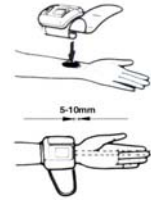
Remark:

If time set is not finished, Measure, Save, Query functions shall not be operated; when the device is switched on again, time set is still needed.

Measuring Blood Pressure

Fastening the Wrist Holder

1. Turn left hand so that palm is facing upward. Wrap the Velcro wrist holder over the left wrist with the LCD display facing you. The wrist holder should be in contact with your skin directly with no shirt sleeve or other clothing between the Wrist Holder and your skin as this may



lead to inaccurate readings.

2. The upper end of the unit should be located about 5mm to 10mm away from the palm base line and the centerline of the unit should be in line with the middle finger as shown in the figure. **Avoid capitulum ulnae (wrist tuberositas ulnae bone) wrapped in the wrist cuff.**

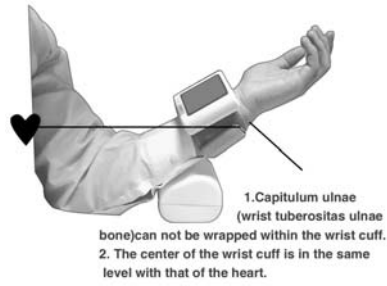


3. Pull up the flap of the Wrist Holder and roll to fasten it as illustrated, neither leaving any space between the Wrist Holder and your wrist nor tightening it too much so as to feel discomfort.



4. If the wrist is thick, do not fasten the wrist holder too hard avoid the distortion of the wrist holder. Otherwise, it will affect the measurement.

5. If the left hand wrist cannot be used due to reasons such as injury, sprain etc, you may use your right hand wrist following the above procedure.



Posture for Measuring

Be seated as shown while measuring blood pressure.

1. Place your left arm with the unit wrapped around your wrist gently on a table .

2. Place your forearm on the plastic case (the packing case of the unit) as illustrated, making the center of the Wrist Holder in the same horizontal level as that of your heart.

3. The supporting plastic case should not press against the Wrist Holder, and the wrist should be held straight as shown. Neither incurve nor outcurve your wrist.

4. Keep yourself dispassionate and relax your entire body.

**Remarks:**

Please try to maintain correct posture while measuring. Avoid leaning forward or backward during measurements to get correct readings.

Do not speak and do not touch the monitor when measuring is taking place.

Your blood pressure readings displayed may be higher than normal under the following circumstances:

- a) if you measure immediately after drinking alcohol or smoking, having meals or after a strenuous physical workout
- b) if you are stressed out, have mood swings or have had inadequate sleep
- c) if you feel like going to the lavatory

Measuring Method

1. Press the On/Off button. All characters and symbols will flash on the screen, confirming normal display.

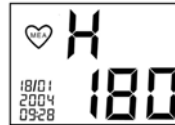


2. After about one second , the air relief symbol ↓ begins to flash, indicating the Blood Pressure Monitor is deflating the residual air in the Wrist Holder.



3. Upon the completion of air deflating, you will hear the buzzer beep and meanwhile the air relief symbol ↓ will disappear. This completes the initialization process and the unit is ready for measurement.

Indicator ♥ will appear, and the digit 0 (zero) will show up on the Display. The system is set to measure mode by default and the Mode Indicator MEA is displayed.



4. The unit is in command waiting status at this moment and other functions can be navigated by pressing the MODE key. In the measurement mode, in case

setting of the upper limit of pressurization is not activated by the user for 3 seconds, the unit will automatically commence to pressurize. Pressurizing symbol ↑ will be displayed and the air pump will automatically inflate and pressurize the Wrist Holder and the system enters the measurement mode. The MODE key and SET key will not respond to operation before the completion of measurement.

5. Gradually ascending pressure value can be seen on the Display Window and you can feel the Wrist Holder tightening your wrist gradually.

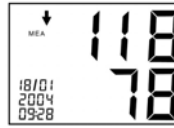


The air pump will stop automatically as the pressure reaches the set value, and the pressurization symbol ↑ will disappear, indicating the end of pressurization. When air pressure detected by the system is inadequate, the air pump will be started again to continue to pressurize to reach a higher air pressure level. The air

pressure levels set as follows, in mmHg unit:
180, 240 and 290, totaling 3 grades.



6. Upon the completion of pressurization, the air pressure inside the Wrist Holder will decrease automatically. A buzzer accompanied by flashing of the symbol ♥ on the Display Window indicates the beginning of the measurement of your blood pressure and pulse.



Please wait patiently for the readings.

7. Upon the completion of measurement, the air relief symbol ↓ will flash, and the residual air inside the Wrist Holder will be discharged quickly. The buzzer will beep when

the air pressure inside the Wrist Holder descends below 5mmHg, and meanwhile, the symbol ♥ will appear on the Display Window. And then, your blood pressure values as well as pulse will show upon the screen alternately (blood pressure and pulse displayed about 3.5 seconds and 2 seconds respectively).



8. Upon the completion of your measurement after you turn the machine on, the system will not pressurize automatically in case MEA still displays. Next operation is available by pressing the SET key with one touch.

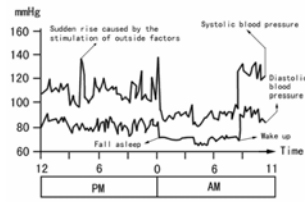
9. Just press On/Off button to turn the machine off.

Blood Pressure Commonsense

Blood pressure fluctuates all the time and possesses the property of periodical change within one day.

Fluctuation Within A Day

Blood pressure values measured every five minutes over the course of a day



(Healthy 31-year-old male)

The basic blood pressure is your blood pressure taken when you are at your calmest, both mentally and physically. Since it is the basic index used when assessing the current state of your health, due importance should be accorded.

This basic blood pressure should be measured ideally under the following conditions:

- 30 minutes to one hour after waking up (before breakfast)
- At room temperature of 15 degrees to 25 degrees Celsius (60 F to 80 F)
- After resting your body for more than 30 minutes
- After using the lavatory
- When you feel physically and mentally calm

Please try to keep the correct posture while measuring.

Do not be too anxious or too affirmative about your temporary blood pressure readings. Please record the variations of your daily blood pressure, and then consult with your doctor. The measuring results of continuous examinations might be

dramatically different, and it is caused by changed volume of blood flow resulted from deformed blood vessels upon pressure (particularly common for the old because of the poor flexibility of their blood vessel, their high blood viscosity as well as low recovery speed).

Generally, your blood pressure value taken in a hospital is higher 20mmHg-30mmHg than that taken at home. This is caused by a sudden rise of your blood pressure on account of your nervousness resulting from your body's alert reactions to movement, crowd, surroundings as well as the presence of medical staff.

Your pulse, just as your blood pressure value, will also change along with the difference of your body condition as well as physical movement.

Save, Inquiry and Clear

The SAVE function can record the high blood pressure (systolic) value, low blood pressure (diastolic) value, pulse and measured time upon the completion of measurement by pressing MODE key to select SAVE function followed by pressing SET key to confirm SAVE function. The system will not respond to SAVE function other than in the above situation even if the MODE key is pressed down to select the SAVE function followed by pressing SET key to confirm. On the contrary, the system will automatically transfer to the next operation mode---QUE mode.

Saving Measurements

After finishing measurement, press Mode key to choose save function. With the display of indication SAVE, it will appear NO.1, which indicates to save the first measurements. You

can continue to press MODE key to save the second (NO.2) or the third (NO.3) measurement. It can save measured pulse, systolic, diastolic values and measured time only after pressing set key again. The system automatically chooses saving order and can save 30 measurements for each one at most.



Upon the number of sets saved exceeding 30, the system will erase the oldest values and keep the latest values. Saving order keeps unchanged.

Query Function of Blood Pressure Data

After switching the unit on, the symbols 0, ♥ and the measuring mode indicating SAVE will display on the



screen. The system is in command waiting status and press MODE key to select query measurements function.

When the mode indication QUE displays, NO.1 will appear on the screen and indicate to query the first person's measurements. You can choose to query the second or the third person's measurements by pressing MODE key continuously. Press SET key again to confirm.



A set of saved measurement values numbered 1 will appear on the screen.

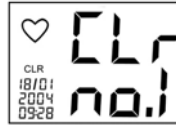


(The first screen display is pulse symbol P, saving NO., pulse value and measuring time. The second screen display is systolic and diastolic pressure values.) Upon pressing SET key once again, another set of saved values numbered 2 will appear on the screen and so on. After the last

numbered 30 set of saved values has thus been displayed, pressing SET key once again, the system will display saved values numbered 1 again. Further pressing of SET key will again display the values at number 1 and so on cyclically.

Clear Saved Measurements

When the system is in command waiting status, press MODE key to select clear function. When the mode indication CLR displays in the LCD, CLR no.1 displays and CLR is flashing, which indicates to clear the first person's measurements. You can choose to clear the second (NO.2) or the third (NO.3) person's measurements by pressing MODE key continuously. Press SET key again to confirm and the system will clear all saved




measurements.

Remarks:

1. The saved data will still be kept in the system when the machine is turned off and then on or after the batteries are replaced.
2. The system will appear 0 in case no data has been stored and QUE function is selected.

Error Display

Display	Cause	Treatment
E	With Noise	Release the Wrist Holder and Re-wear it for another measurement.
	Your wrist, finger or body moved or you talked while measuring	Keep calm & quiet for 5 minutes and measure again.
	Wrist Holder worn over shirt sleeve	Unbutton sleeve and wrap unit directly over the wrist.
	Pressure exceeding 300mmHg	Measure again.
	Battery Used Out	Replace the old batteries.

EE	Upper Limit for Pressurization not High Enough	Set a higher upper limit and measure again. For e.g. if the upper limit was earlier set to 180, reset this to the next higher limit, 240.
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Faults & Causes

Fault	Treatment
Systolic Blood Pressure Value too High while Diastolic Blood Pressure Value too Low	Wrong Wrist Holder Location, or Wrist Holder incorrectly fastened, or you talked or moved your wrist.
Systolic Blood Pressure Value too Low while Diastolic Blood Pressure Value too High	Wrist Holder incorrectly fastened, or shirt sleeve wrapped by the Wrist Holder.

Difference in readings when measured at the doctor's clinic	People tend to have subtle psychosomatic changes in the presence of a doctor, and identical results are rare.
No display when turning the machine on by pressing On/Off button	Battery used out or wrong installation of the batteries.

The wrist blood pressure measurements are the different with that of upper arm blood pressure because of different measuring parts. Normally, the systolic and diastolic blood pressure difference between wrist and upper arm blood pressure is within ± 10 mmHg for healthy adults.

Maintenance & Operation Precautions

 <p>DO NOT drop or give a strong shock to the unit.</p>	 <p>DO NOT inflate the unit without strapping it on your wrist.</p>
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DO NOT attempt to disassemble the unit.



DO NOT store in extremely low (less than 0°C) or high (more than 60°C) temperature. Do not expose to moisture.

DO NOT bend the Wrist Holder in the direction opposite to its shape.



Warranty will be void if any of the above occurs.

Specifications

Name	SHENGFU Microcomputer Wrist Blood Pressure Monitor
Model	□SF822B
Display Mode	Large Digital Liquid Crystal Display (LCD)
Measurement Range	Pressure: 0 - 37.3kPa (0 - 280mmHg) Pulse: 40-200 Beats/Min
Accuracy	Pressure: $\pm 0.4\text{kPa}$ ($\pm 3\text{mmHg}$) Pulse: $\pm 5\%$
Pressurization Mode	Automatic Pressurization
Power Supply	Two AAA Size Batteries
Gross Weight	Around 275g
Operating Temperature & Relative Humidity (RH) airpressure	Temperature: 10°C-40°C Relative Humidity (RH) $\leq 80\%$ Airpressure:86kPa--106kPa 645mmHg—795mmHg

Maintenance Temperature & Relative Humidity (RH) airpressure	Temperature: 0°C-40°C Relative Humidity (RH):≤80% Airpressure:50kPa-106kPa 375mmHg-795mmHg
Packing Dimension	100mm×83.3mm×88mm(L×W×H)

Guarantee

MILLENNIUM blood pressure monitor is guaranteed for **2 years** from date of purchase.