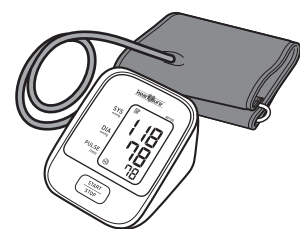


# heart sure

## Automatic Blood Pressure Monitor

Model BP100  
Instruction Manual



3723568-1A

### Introduction

Thank you for purchasing the BP100 Automatic Blood Pressure Monitor. The BP100 is a compact, fully automatic blood pressure monitor, operating on the oscillometric principle. It measures your blood pressure and pulse rate simply and quickly. For comfortable controlled inflation without the need of pressure pre-setting or re-inflation the device uses its advanced "IntelliSense" technology.

#### Intended Use

This device is a digital monitor intended for use in measuring blood pressure and pulse rate in adult patient population who can understand this instruction manual with the arm circumference range printed on the arm cuff.

Please read this instruction manual thoroughly before using the device.

Please keep for future reference. For specific information about your own blood pressure, CONSULT YOUR PHYSICIAN.

### Important Safety Information

**Warning:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

#### (General Usage)

- ▲ DO NOT adjust medication based on measurement results from this blood pressure monitor. Take medication as prescribed by your physician. Only a physician is qualified to diagnose and treat High Blood Pressure.
- ▲ Consult your physician before using the device in pregnancy including pre-eclampsia, or if diagnosed with arrhythmia or arteriosclerosis.
- ▲ Do not use the device on the injured arm or the arm under medical treatment.
- ▲ Do not apply the arm cuff on the arm while being on an intravenous drip or blood transfusion.
- ▲ Consult your physician before using the device on the arm with an arterio-venous (A-V) shunt.
- ▲ Do not use the device with other medical electrical (ME) equipment simultaneously.
- ▲ Do not use the device in the area the HF surgical equipment, MRI, or CT scanner exists, or in the oxygen rich environment.
- ▲ The air tube may cause accidental strangulation in infants.
- ▲ Contained small parts that may cause a choking hazard if swallowed by infants.
- ▲ **Caution:** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or damage to the equipment or other property.

#### (General Usage)

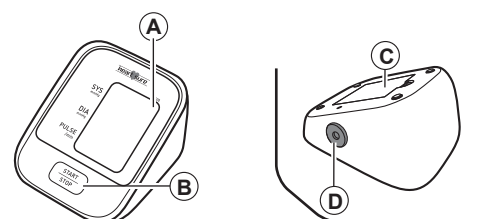
- ▲ Always consult your physician. Self-diagnosis of measurement results and self-treatment are dangerous.
- ▲ People with severe blood flow problems, or blood disorders, should consult a physician before using the device, as the arm cuff inflation can cause bruising.
- ▲ Remove the arm cuff if it does not start deflating during the measurement.
- ▲ Do not use this device on infants or persons who cannot express their intentions.
- ▲ Do not use the device for any purpose other than measuring blood pressure.
- ▲ Use only the approved arm cuff for this device. Use of other arm cuffs may result in incorrect measurement results.
- ▲ Do not use a mobile phone or other devices that emit electromagnetic fields, near the device. This may result in incorrect operation of the device.
- ▲ Do not disassemble the monitor or arm cuff. This may cause an inaccurate reading.
- ▲ Do not use in a location with moisture, or a location where water may splash on the device. This may damage the device.
- ▲ Do not use the device in a moving vehicle (car, airplane).
- ▲ Do not take measurements more than necessary. It may cause bruising due to blood flow interference.
- ▲ Consult your physician before using the device if you had a mastectomy.
- ▲ Read "If your systolic pressure is more than 210 mmHg" of this instruction manual, if your systolic pressure is known to be more than 210 mmHg. Inflating to a higher pressure than necessary may result in bruising where the cuff is applied.
- (Battery Usage)**
- ▲ Do not insert the batteries with their polarities incorrectly aligned.
- ▲ Use only 4 "AA" alkaline or manganese batteries with this device. Do not use other types of batteries. Do not use new and used batteries together.
- ▲ Remove the batteries if the device will not be used for three months or more.
- General Precautions**
- Do not forcibly crease the arm cuff or the air tube excessively.
- Do not press the air tube while taking a measurement.
- To unplug the air plug, pull on the air plug at the connection with the monitor, not the tube itself.
- Do not drop the monitor or subject device to strong shocks or vibrations.
- Do not inflate the arm cuff when it is not wrapped around your arm.
- Do not use the device outside the specified environment. It may cause an inaccurate reading.
- Read and follow the "Important information regarding Electro Magnetic Compatibility (EMC)" in the EMC information provided with this device.
- Read and follow the "Correct Disposal of This Product" in "6. Specifications" when disposing of the device and any used accessories or optional parts.

## 1. Know Your Device

### Contents:

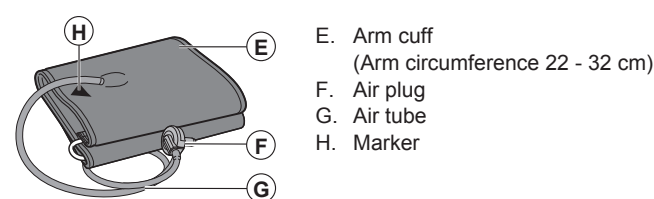
Monitor, arm cuff, instruction manual, battery set

### Monitor:



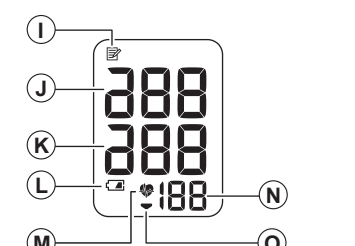
- A. Display  
B. START/STOP button  
C. Battery compartment  
D. Air jack

### Arm cuff:



- E. Arm cuff (Arm circumference 22 - 32 cm)  
F. Air plug  
G. Air tube  
H. Marker

### Display:



- I. Memory symbol  
J. Systolic blood pressure  
K. Diastolic blood pressure  
L. Battery symbol (low/depleted)  
M. Heartbeat symbol  
N. Pulse display  
O. Deflation symbol

2013 ESH/ESC Guidelines for the management of arterial hypertension  
Definitions of hypertension by office and home blood pressure levels

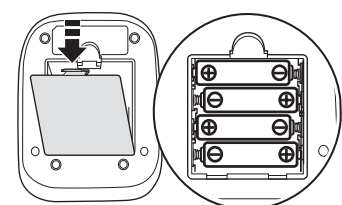
|                          | Office     | Home       |
|--------------------------|------------|------------|
| Systolic Blood Pressure  | ≥ 140 mmHg | ≥ 135 mmHg |
| Diastolic Blood Pressure | ≥ 90 mmHg  | ≥ 85 mmHg  |

These are form statistical values for blood pressure.

## 2. Preparation

### 2.1 Battery Installation

- Remove the battery cover.



- Insert 4 "AA" batteries as indicated in the battery compartment.

- Replace the battery cover.

#### Notes:

- When the depleted battery symbol (□) appears on the display, turn the monitor off and remove all the batteries. Replace with 4 new batteries at the same time. Long life alkaline batteries are recommended.
- The measurement values continue to be stored in memory even after the batteries are replaced.
- The supplied batteries may have a shorter life.

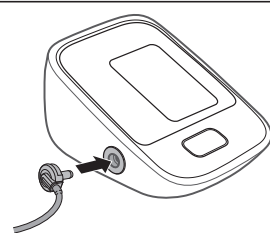
- ▲ Disposal of used batteries should be carried out in accordance with the national/local regulations for the disposal of batteries.

## 3. Using the Device

### 3.1 Applying the Arm Cuff

Remove tight-fitting clothing or tight rolled up sleeve from your left upper arm. Do not place the arm cuff over thick clothes.

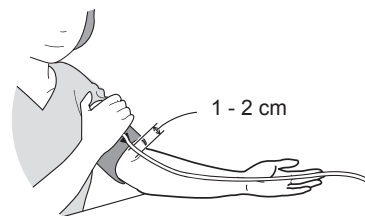
- Insert the air plug into the air jack securely.



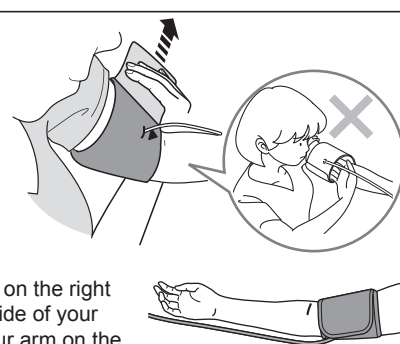
- Wrap the arm cuff firmly in place around your left upper arm.



The bottom edge of the arm cuff should be 1 to 2 cm above the elbow. Air tube is on the inside of your arm and aligned with your middle finger.



- Secure closed with the fabric fastener.



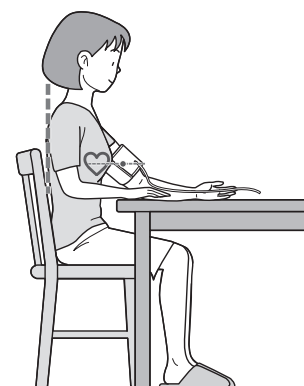
#### Notes:

- When you take a measurement on the right arm, the air tube will be at the side of your elbow. Be careful not to rest your arm on the air tube.
- The blood pressure can differ between the right arm and the left arm, also the measured blood pressure values can be different. Recommend to always use the same arm for measurement. If the values between both arms differ substantially, please check with your physician which arm to use for your measurements.

## 3.2 How to Sit Correctly

To take a measurement, you need to be relaxed and comfortably seated, under comfortable room temperature. Avoid bathing, drinking alcohol or caffeine, smoking, exercising or eating 30 minutes before taking a measurement.

- Sit on a chair with your legs uncrossed and your feet flat on the floor.
- Sit upright with your back straight.
- Sit with your back and arm being supported.
- The arm cuff should be placed on your arm at the same level as your heart.



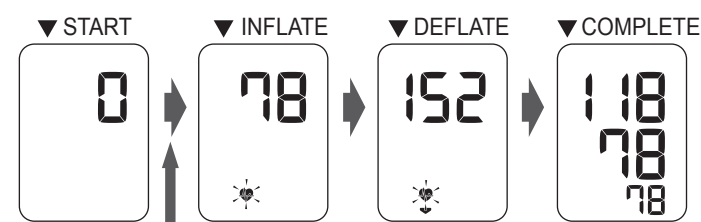
## 3.3 Taking a Measurement

#### Notes:

- To stop a measurement, press the START/STOP button once to release the air in the arm cuff.
- Remain still while taking a measurement.

- Press the START/STOP button.

The arm cuff will start to inflate automatically.



**If your systolic pressure is more than 210 mmHg**

After the arm cuff starts to inflate, press and hold the START/STOP button until the monitor inflates 30 to 40 mmHg higher than your expected systolic pressure.

#### Notes:

- The monitor will not inflate above 299 mmHg.
- Do not apply more pressure than necessary.

- Remove the arm cuff.

- Press the START/STOP button to turn the monitor off. The monitor automatically stores the measurement result in its memory. It will automatically turn off after 2 minutes.

Note: Wait 2-3 minutes before taking another measurement. Waiting between measurements allows the arteries to return to the condition prior to taking a measurement.

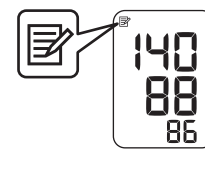
- ▲ Always consult your physician. Self-diagnosis of measurement results and self-treatment are dangerous.

## 3.4 Using the Memory Function

The monitor automatically stores the last measurement values (blood pressure and pulse rate).

### To View the Measurement Values Stored in Memory

- Press and hold the START/STOP button for more than 5 seconds. The last measurement value is displayed along with the memory symbol.

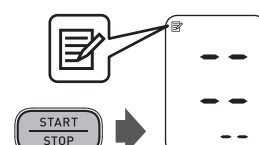


Note: If there are no measurements results stored in the memory, the screen to the right is displayed.

- Press the START/STOP button to turn the monitor off. It will automatically turn off after 2 minutes.

### To Delete the Values Stored in Memory

Press and hold the START/STOP button for more than 15 seconds.



## 4. Error Messages and Troubleshooting

### 4.1 Error Messages

| Error Display | Cause  | Solution  |
|---------------|--|---|
|               | The batteries are low.   | Recommend to replace the batteries with new ones ahead of time. Refer to section 2.1.   |
|               | The batteries are depleted.  | Replace 4 batteries with new ones at once. Refer to section 2.1.  |
| E1            | Air plug disconnected.   | Insert the plug securely. Refer to section 3.1.   |
|               | Arm cuff is applied too loosely.   | Apply the arm cuff tighter. Refer to section 3.1.   |
| E2            | Air is leaking from the arm cuff.  | Replace the cuff with a new one. Refer to section 5.3.  |
|               | Movement during measurement and the arm cuff has not been inflated sufficiently.                     | Repeat measurement. Remain still and do not talk during measurement. Refer to section 3.3.  |
| E3            | The arm cuff was inflated exceeding the maximum allowable pressure, and then deflated automatically. | Do not touch the arm cuff and/or bend the air tube while taking a measurement. Do not inflate the arm cuff more than necessary. Refer to section 3.3. |
| E4            | Movement during measurement.   | Repeat measurement. Remain still and do not talk during measurement. Refer to section 3.3.  |
| E5            | Clothing is interfering with the arm cuff.   | Remove any clothing interfering with the arm cuff. Refer to section 3.1.  |
| E7            | Device error.  | Contact your local representative.  |

### 4.2 Troubleshooting

| Problem  | Cause   | Solution   |
|--|---|--|
| The measurement result is extremely high (or low).     | Arm cuff is applied too loosely.  | Apply the arm cuff tighter. Refer to section 3.1.  |
|  | Movement or talking during measurement.   | Remain still and do not talk during measurement. Refer to section 3.3.                                     |
|  | Clothing is interfering with the arm cuff.  | Remove any clothing interfering with the arm cuff. Refer to section 3.1.                                   |
| Arm cuff pressure does not rise.                       | The air connector is not securely connected into the air jack.  | Make sure that the air tube is connected securely. Refer to section 3.1.                                   |
| Arm cuff pressure does not rise.                       | Air is leaking from the arm cuff.   | Replace the arm cuff with a new one. Refer to section 5.3.   |
|  | The arm cuff is loose.  | Apply the cuff correctly so that it is firmly wrapped around the arm. Refer to section 3.1.                |
| Cannot measure or the results are too low or too high. | The arm cuff has not been inflated sufficiently.  | Inflate the cuff so that it is 30 to 40 mmHg above your previous measurement result. Refer to section 3.3. |
| Nothing happens when you press the buttons.            | The batteries are depleted.   | Replace the batteries with new ones. Refer to section 2.1.   |
|  | The batteries have been inserted incorrectly.   | Insert the batteries with the correct (+/-) polarity. Refer to section 2.1.                                |
| Other problems.  | <ul style="list-style-type: none"> <li>• Press the START/STOP button and repeat measurement.</li> <li>• Replace the batteries with new ones.</li> <li>• If the problem continues, contact your local representative.</li> </ul> |  |

What is blood pressure?

Blood pressure is simply a measure of the pressure of your blood in the arteries as your heart is pumping it around your body. You may have heard phrases like "over 90," "90 over 60," or "140 over 90." So what does that mean?

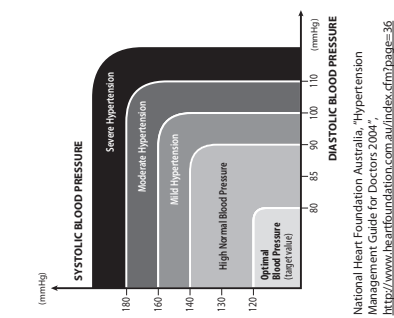
The first figure, in this case "140" is called the systolic blood pressure, while the second figure (90) is called the diastolic blood pressure.

**Systolic Blood Pressure**  
Systolic (top number) blood pressure is a measure of the pressure in the arteries when the heart pumps the blood into the arteries when it beats.

**Diastolic Blood Pressure**  
The diastolic (the bottom) pressure is the smaller number. It is the pressure when the heart is at rest, between beats.

What is normal blood pressure?

As more clinical studies show the damaging effects of high blood pressure, health authorities are now recommending that we should aim for a reading of 130/80 (mmHg). Your doctor will advise you of what you should be aiming for.



National Heart Foundation Australia, "Hypertension Management Guide for Doctors 2004",  
Version 17 May 2005. [http://www.nhf.org.au/heart\\_healthy/040505.htm#page-36](http://www.nhf.org.au/heart_healthy/040505.htm#page-36)

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Warranty Information  
Digital Blood Pressure Monitors

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