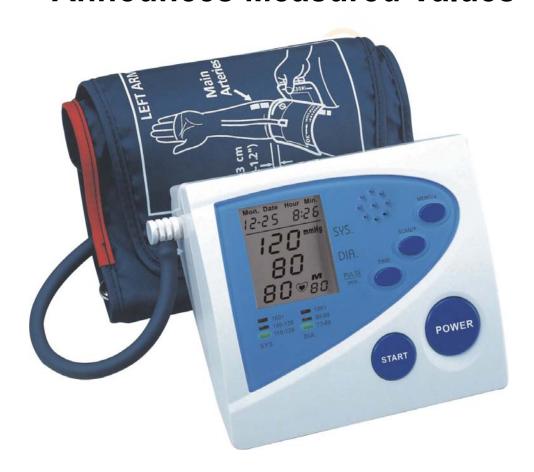
# **Instruction Manual**

# Automatic Blood Pressure Monitor for Arm - Voice Prompt Function Announces Measured Values



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#### **Introduction**

Thank you for purchasing the ZOpid HB-ZA310V Automatic Blood Pressure Monitor.

For your safety, please be sure to read this Instruction Manual thoroughly before using the Blood Pressure Monitor. For other specific information about your own blood pressure, CONTACT YOUR PHYSICIAN.

- Measures Blood Pressure (SYS. & DIA.) & Pulse.
- Fuzzy logic measurement system with fully automatic inflation and deflation to provide home blood pressure monitoring convenience.
- Voice prompt function announces measured values.
- 80 sets of memory with Date/Time
- Easy to wrap arm cuff suitable for arm sizes 8.7" to 12.6" (Large cuff sold separately fits arms 12.6" to 16.6" in circumference)
- Automatic turn-off after 1 minute.
- Low Battery icon and intelligent error detection.
- Operates on four "AA" alkaline batteries.
- Recall and Scan functions.
- Delete single or all measurements.

#### **Warning Signs & Safety Statements**

*ATTENTION!! Read instruction manual before use.
*Type BF applied part
*Double insulated

#### **Health and Blood Pressure Values**

Blood pressure of the human body inclines to increase naturally from middle age. This symptom is due to the continuous aging of the blood vessel. Further causes from obesity, lack of exercise, cholesterol (LDL) adhered to the blood vessels will cause the same symptom and let the vessel lose their elasticity. Higher blood pressure will accelerate the hardening of the arteries, and the body becomes more susceptible to apoplexy and coronary heart disease. This is the reason we need to know the routine blood pressure trend in order to see whether our body condition is healthy or not. The blood pressure fluctuates constantly throughout our daily life and is an essential element for our daily health management.

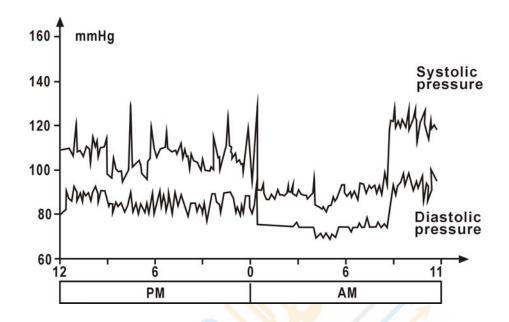
#### **What is Blood Pressure**

Blood is pumped to artery by the beat (contraction and expansion) of a pump called the heart. The pressure of the pumped-out blood is called the "blood pressure". Blood pressure heaves with each beat of the heart. The raised pressure when the heart contract is called the "systolic blood pressure" and the lowered pressure when the heart expands are called the "diastolic pressure".

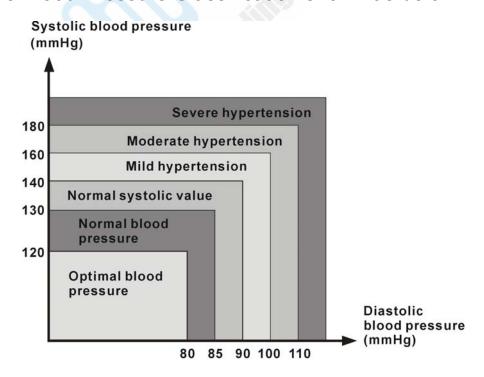
Blood pressure is typically low in the morning and increases from the afternoon to the evening. It is lower in the summer and higher in the winter. The blood pressure naturally varies from time to time through out the day. Many factors that may cause the blood pressure to fluctuate: Breathing, Exercise, Mental stress, Smoking, Eating, Concern, Environmental and/or temperature change, the Time of day, Urination and bowel movement, Conversation, Taking bath, Drinking alcohol, Medicament and Physical activity, etc.

Variations in Blood Pressure:

The variations in blood pressure over a whole day with measurement taken every five minutes as shown below.



Classification of Blood Pressure by the WHO:
 The World Health Organization (WHO) and the Inter-national Society of Hypertension (ISH) developed the Blood Pressure Classification shown as below.



According to the blood pressure classification by the WHO/ISH (revised in 1999)

#### **Important Information**

- Blood pressure values measured at home tend to be lower than those measured in the hospital. This is caused by the fact that you are nervous when you have your blood pressure measured in the hospital, but you feel relaxed at home. It is important to know your stable normal blood pressure measured at home.
- It is recommend that persons has one of the diseases as heart troubles, kidney trouble, hyper-tension, diabetes, arteriosclerosis or frustration problem of blood vessel, please consult your physician before and during using the blood pressure monitor to determine if your arm blood pressure accurately reflects your actual blood pressure.
- Blood pressure fluctuates even by 30 to 50 mmHg depending on whether you are nervous or relaxed, exercise or the environment (temperature or mental state) without being noticed.
- The device may show some reading error in the presence of common arrhythmia such as arterial or ventricular premature beats or arterial fibrillation.

#### **Precautions**

- This unit will not serve as a cure of any symptoms of your cardiovascular diseases or other diseases. The data measured is only for reference. Always consult your physician if any abnormal results measured.
- Always follow the operation procedures described in the manual when you expect to measure your correct blood pressure.
- Be sure to store this manual well for future reference.
- Diseases such as diabetes and hyper lipid accelerate

hardening of the arteries. If such conditions continue, there is an increased danger of apoplexy and coronary infarction, arterial stenosis and disorder in peripheral blood circulation. In such cases, there will be a large difference between blood pressure values taken at the wrist and upper arm. (Since even healthy persons may show a difference of 20 mmHg if the conditions of the measurement status are not suitable. Do not rely on the self-diagnosis or just one measurement, and always follow the advice of a physician.) Physiological conditions may have varying degrees of effect, but generally blood pressure values at the wrist and upper arm should display the same pattern of change. Consequently, it is possible to monitor trends in change by measuring blood pressure at the wrist.

#### **Contraindications**

- Do not use the device on infants and persons who cannot express his/her own will, which may lead to serious accidents.
- Do not use the device for purposes other than measuring blood pressure.
- Do not use this device near any mobile phone or microwave oven in use, or reading error may occur.
- Do not try to disassemble or modify the unit or wrist cuff, which may damage the unit or cause permanent reading error.
- Do not start the inflation when the wrist cuff is not wrapped around the wrist.
- Do not drop this unit and avoid the device from strong impact.

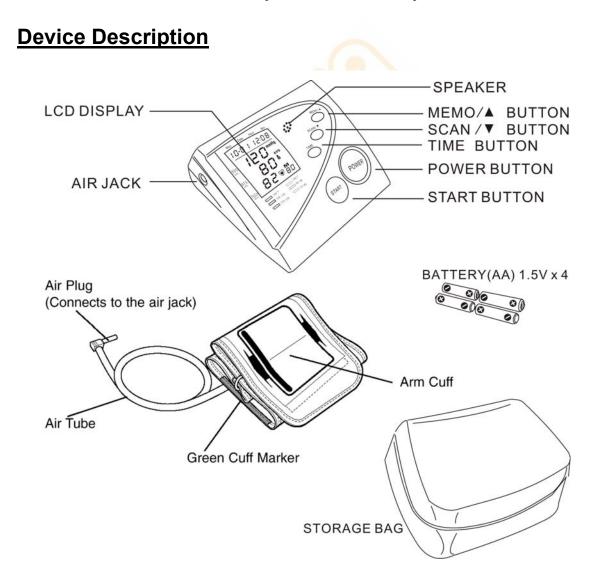
#### **Warning**

- If the inflation continues and doesn't stop, please untie the cuff immediately or turn off the unit by pressing the POWER button.
- Do not measure repeatedly for a long period of time.
- This device is not supposed to be used if your wrist has any wound or injury.
- Remove batteries if not using the device for a long time.
- Do not use batteries in different type or brand for this may lead to an incorrect reading and possibly cause battery explosion (mix using alkaline and heavy duty batteries).
- Leaving the batteries in the blood pressure monitor for over 3 months and not using the device may damage the device by battery leakage. Please read the Installing/Replacing Batteries section in this manual.
- The device might not meet its normal performance if stored or used beyond the temperature and humidity ranges specified below.
  - Operating conditions: 10°C~40°C, 40%~85% R.H.
  - Conditions for storage: -20°C~50°C, 15%~85% R.H.

#### **Suggestions before Measuring Blood Pressure**

- 1. Please relax yourself physically and mentally for at least 5-10 minutes before measurement.
- Avoid eating, smoking, exercising, bathing and drinking (alcohol/coffee/tea) for at least 20-30 minutes before measuring your blood pressure.
- 3. Be sure the wrist cuff is at the same level as your heart.
- 4. Stress raises blood pressure. Keep calm and relaxing during measurement.
- 5. Please DO NOT talk or speak during measurement.

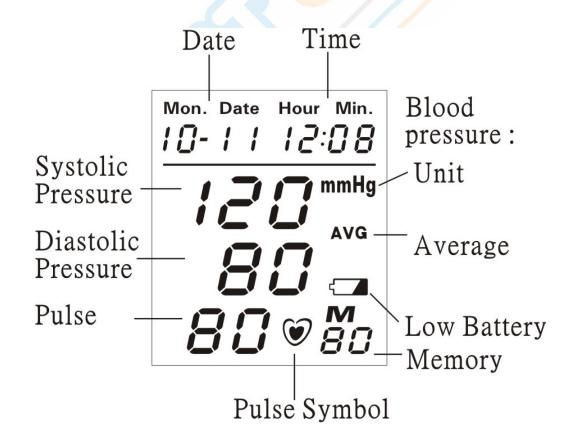
- 6. Avoid urination or bowel movement before taking a measurement.
- 7. Wait at least 3 minutes before you take another blood pressure measurement.
- 8. Keep the records for your physician as reference. Reminded that one measurement can't conclude the health of your blood pressure, only recording long-term measuring results will reveal the long-term trend of your blood pressure. Try to measure your blood pressure at the same time each day for consistency.



#### **Description of Control Buttons**

- POWER: To turn on or turn off the unit
- START: Start inflating to measure blood pressure and pulse. To set the language of voice prompt or voice on/off.
- **TIME**: To set the Date/Time.
- MEMO/▲: To review the measured record(s) by manual.
   To select the digit of the Date/Time.
- SCAN/▼: Automatically review all previously memorized record(s) / To select the digit of Date/Time / To delete memorized record(s).

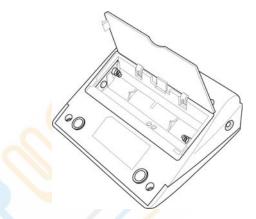
#### **Description of LCD Display Symbols**



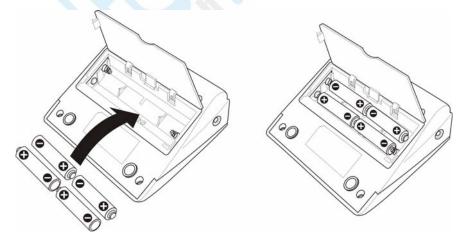
#### **Installing/Replacing Batteries**

Be sure the unit turned off before installing/replacing batteries, or the memories & Date/Time setting will be erased. If the batteries are removed for more than 30 seconds, the memories and the Date/Time setting will be erased. Then, you must reset the Date/Time.

1. Slide the battery compartment to remove it.



- 2. Place the batteries (4 "AA" Alkaline batteries) in the compartment as indicated by the polarity symbols (+ and -) marked inside. All the display symbols appear for 1 seconds and then return to standby mode.
- 3. Replace the battery compartment cover.



Note: When (Low Battery indicator) appears on the display, the batteries are weak.

#### Warning:

- a. Be sure to follow the instruction above when plugging the adapter and installing or replacing the batteries.
- b. We recommend you to use the **ALKALINE batteries** for the best performance and the longest device life.
- c. Use only brand new batteries of the required size and DO NOT mix using old and new or different type of batteries together.
- d. Remove the batteries if not using the blood pressure monitor for an extended period (i.e., 3 months). The batteries can leak chemicals then damage the electronic parts.
- e. Immediately replace run-down batteries with new ones.
- f. Check the batteries periodically and replace them when necessary.
- g. When using the adapter alone without battery, the memories and the Date/Time setting won't be kept during the power failure.

#### **Voice Prompt Function**

When first plugging the adapter or installing the battery, the initial mode is voice prompt mode. While starting the unit and operating each time, there is a voice prompt to remind you. It's especially useful to the elder or sightless man. You can turn off this function if you don't want to hear any reminder.

#### **Set the Language of Voice Prompt**

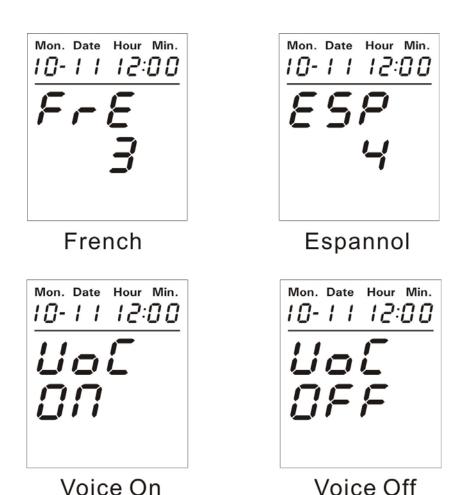
There are four languages of voice prompt (English, Deutsche, French, Espanol) can be set. Make sure you have turned off the unit before you want to set the voice prompt function.

- Press START button, the unit will show "Eng 1" (default) and speak a demo voice in English "Memory number 3, Systolic pressure 160 high, Diastolic pressure 66 normal, Pulse rate 62"
- 2. Press **MEMO**/ ▲ button or **SCAN**/ ▼ button to set the number representing the language.
- 3. Press **START** button to confirm and the unit will show "**UoC On**" (default)
- Press MEMO/ ▲ button or SCAN/ ▼ button to set the voice prompt on or off.
- 5. Press **START** button to confirm and the unit will go to standby mode





Deutsche



#### Note:

When using Voice Prompt Function, it increase the power consumption, it also reduce the life of the battery.

#### **Program Date and Time**

- Press and hold **TIME** button for 2 seconds until "2007" shown on the screen and starts to flash.
- 2. Press **MEMO**/ ▲ button or **SCAN**/ ▼ button to set the number representing the **Year**.
- 3. (You can press and hold **MEMO**/ ▲ or **SCAN**/ ▼ buttons for about 2 seconds, the number of the **Year** will be displayed in the faster speed.)
- 4. Press **TIME** button to confirm the **Year** setting. Then the number representing the **Date** will flash.

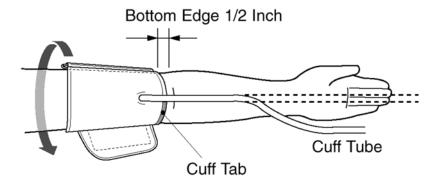
5. In the same manner, set the **Month**, **Date**, **Hour** and **Minute**.

Note: After replacing batteries, always check the Date/Time is properly set or not first, then use the blood pressure monitor. If the batteries are removed for more than 30 seconds, you must reset the Date/Time.

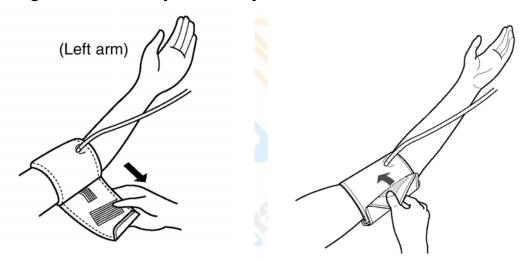
#### **How to Apply the Arm Cuff**

- 1. Insert the air plug of the arm cuff into the air jack of the blood pressure monitor.
- The cuff should be assembled correctly when it is removed from the box. If it is not, pass the end of the cuff furthest from the tubing through the metal D-ring to form a loop. The smooth cloth should be on the inside of the cuff loop.
- 3. If the cuff is assembled correctly, the sewn hook material will be on the outside of the cuff loop and the metal D-ring will not touch your skin.

4. Put your left arm through the cuff loop. The bottom of the cuff should be approximately 1/2" above the elbow. The cuff tubing should be positioned along the middle of the inside of your arm as shown.



5. Pull the cuff so that the top and bottom edges are tightened evenly around your arm.



- 6. When the cuff is positioned correctly, press the sewn hook material firmly against the pile side of the cuff.
- 7. The cuff should be wrapped so that it fits snugly and stays in place. You should be able to fit one finger between the cuff and your arm.

#### **Correct Measurement Position**

It is extremely important for accurate measurements that the cuff is at the heart level. Higher or lower position will give deviations from the true value.

#### Measurement while sitting down

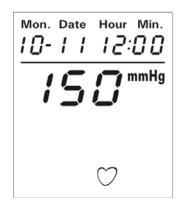
- 1. Sit in a chair with your feet flat on the floor and rest your arm on a table so that the cuff is at the same level as your heart.
- 2. Relax your arm and turn your palm upward.
- 3. Make sure there are no kinks in the air tubing.

4. After taking deep breaths for several times before measurement, take a natural breath, and then relax your body.

#### **How to Take a Measurement**

Please read and follow directions in the section "Suggestions before Measuring Blood Pressure" and "How to Apply the Arm Cuff" before taking a measurement.

- Press POWER button to turn on the unit.
   All the symbols displayed for a couple seconds then the number 0. The unit says "measurement ready"
- 2. Press **START** button, the cuff automatically inflates to approximately 170mmHg. (50mmHg higher than the average systolic blood pressure reading.)
- 3. When the cuff reaches your correct inflation level, it begins to deflate automatically with decreasing numbers shown on the display. The Heart Symbol flashes as the onset of oscillation signals.







- \* If during deflation the blood pressure monitor senses that higher pressure is required to measure the user's blood pressure, the device will stop deflation and pump again to reach the workable pressure (up to the max. 280 mmHg). If the inflation continues and doesn't stop, please untie the cuff immediately or turn off the unit by pressing the **POWER**.
- 4. The monitor exhausts the residual air when the measurement is completed. The Heart Symbol stops flashing and your blood pressure and pulse will appear on the display. In the mean time, the unit announces the measured value of Systolic, Diastolic and Pulse twice. After taking the measurement, the latest measured readings will always be displayed before the power is turned off.

#### Note:

- Wait for at least 3 minutes if you want to take another measurement. Waiting allows your blood vessels to bounce back to normal status. More rest time may be required between measurements depending on individual physiological conditions.
- While starting the unit each time, it will give a voice prompt "Power on". If you don't need it, please turn off the announcement.

#### **How to Use the Memory Features**

The blood pressure and pulse measured and displayed are automatically stored in the memory. The blood pressure monitor can store up to 80 measurements. If more than 80 measurements have been taken, the earliest measurement will be erased and replaced by the most recent measurement.

# 1. Review the Average Value and previously measurements:

Press **MEMO**/ ▲ button, the unit first display the average values of Systolic, Diastolic and Pulse with voice prompt. (Averaged from all memorized readings.) Press **MEMO**/ ▲ button again to review the measurement from the latest to the earliest with voice prompt.

The latest measurement (M 01) appears when you press MEMO/ ▲ button. M 01 is the latest reading measured. The Systolic, Diastolic, Pulse and Date/Time of the measurement will be displayed. Press MEMO/ ▲ button to repeatedly review other memorized readings. The readings will be displayed as M 02, M 03, M 04 ... etc. You can press SCAN/ ▼ button to switch to the automatic display mode.

#### 2. Scan all previous measurements:

Press **SCAN**/ ▼ button, the unit will display all measurements one by one in one in one second interval. In the automatic display mode, it doesn't have voice prompt function. You can press **MEMO**/ ▲ button to switch to the single display mode.

#### 3. The 3 colors LED warning lights:

It will indicate the status of each blood pressure measurement is Normal (green), Higher (yellow) or Abnormal High (reddish).

#### **How to delete Single or All Memories**

#### 1. Delete single measurement:

You can delete the single memory just after taking the measurement. Press **SCAN**/▼ button then "**dEL**" will appear and flash and says "delete". Press **SCAN**/▼ button again to confirm the delete function.

#### 2. Delete all measurements:

Turned off the unit first then press and hold SCAN/▼ button until "dEL ALL" displayed and says "delete all". Press SCAN/▼ button again and all memories will be deleted when "00 ALL" shown on the screen and says "deleted".





#### **Maintenance**

#### **Storage**

- 1. Always put the device in the storage box attached when not in use or during transporting.
- 2. If you won't use the device for an extended period like over 3 months, remove the batteries.
- 3. Do not store the device under direct sunlight, high temperature, humid, dusty, or corrosive environment.
- 4. Do not stretch, bend or tug the wrist cuff too hard.
- 5. Do not wet the unit.

#### Cleaning

- 1. Do not use an alcoholic-base, benzene, gasoline or solvent agent to clean the device.
- 2. Wipe with a moistened cloth with clean water or a mild cleaning agent and then dry the device with a soft and dry cloth.
- 3. The dirt on the cuff can be wiped by the moistened cloth and soap.
- 4. Do not flush the device and cuff.
- 5. Do not bend the cuff or sleeve and wrap the sleeve to the inside-out surface.
- 6. Do not disassemble the device or dismantle the cuff or try to repair by yourself. If any problem happens, bring the device to the distributor for further examination.
- 7. Do not operate the device under the severe environment of extreme temperature or humidity, or direct sunshine.

### **Error Message & Troubleshooting**

The unit is manufactured through the complete quality assurance system.

If the measurement is not made correctly, the following error will be displayed. Measure your blood pressure again correctly.

#### **ERROR MESSAGE**

<b>Error Indicators</b>	Cause	How to correct
Mon. Date Hour Min. 10-1112:00	<ul> <li>Incorrect posture in measurement or the user moves or talks during measurement.</li> <li>There are any artificial interference and noise during measurement.</li> <li>User is tense and does not relax or has severe heart beat problem.</li> </ul>	<ul> <li>Cuff is not fastened well; please fasten again by following the instructions.</li> <li>Wait at least 3 minutes before taking another measurement.</li> <li>Repeat steps listed under "How to Take a Measurement."</li> <li>User has special characteristic, please refer to a physician.</li> </ul>

Error Indicators	Cause	How to correct
Mon. Date Hour Min. 10-1112:00	<ul> <li>No pulse or blood pressure sensed.</li> <li>Incorrect posture during measurement.</li> <li>Cuff is not wrapped properly.</li> </ul>	<ul> <li>Cuff is not fastened correctly or not tight enough; please fasten the cuff by following the instructions.</li> <li>Wait at least 3 minutes before taking another measurement. Please see "How to Take a Measurement" on page 15.</li> </ul>
Mon. Date Hour Min. 10-1112:00	<ul> <li>Insufficient or failure inflation.</li> <li>Cuff broken.</li> </ul>	<ul> <li>Cuff is not fastened well; please re-fasten the cuff by following the instructions.</li> <li>Pump, or venting valve or deflation valve failure, please contact the distributor.</li> </ul>

If a trouble occurs while you are using the blood pressure monitor, check the attached Troubleshooting first. If you can not measure your blood pressure correctly even after taking the following countermeasures, the monitor may be broken. Please send the unit to the distributor for repair. Do not dismantle or try to repair the monitor by yourself.

## **TROUBLESHOOTING**

Condition	Cause	Correction
After the batteries are installed, no indication or symbol displayed on the LCD. The wrong indication when power is turned on.	<ul><li>Batteries are not installed properly.</li><li>Batteries run out the electricity.</li></ul>	<ul> <li>Check and correct the battery polarities.</li> <li>Remove the old batteries and wait for one minute, then install the new batteries.</li> </ul>
The inflation cannot be done or the air pressure cannot rise.	Cuff is not wrapped properly.	•Check the arm position and fasten the cuff correctly and re-measure the pressure again.
	Battery low. Battery voltage is excessively low.	<ul> <li>In order to keep the previous measurements &amp; date/time, ensure the unit is turned off before replacing batteries.</li> <li>Replaced with new "AA" Alkaline batteries.</li> </ul>

Condition	Cause	Correction
The blood pressure		●Re-fasten the cuff.
cannot be taken, and		●Relax yourself.
the LCD shows error		■Keep the cuff and
message or wrong		heart at the same
result.		level during the
		measurement.
		■Keep silent and still
		in measurement.
		●If the patient has
		severe heart beat
		problem, and the
	ale	blood pressure
		reading may not be
		correct.
Under normal		Usually people feel
operating		tenser in the
circumstance, the		hospital or clinic
reading at home is	100	(white robe effect)
different from that of		than in their home.
the clinics.	Children of the Children	•Record the results
		and consult with
Each measurement		your physician.
		●The variation might be due to the
has various reading.		different
		environments.
		●The blood pressure
		is changing
		according to the
		physiological or
		psychological status
		of the human body.

# **Specifications**

Model No.	HB-ZA310V
Display	LCD Digital Display
Measurement	Oscillometric method
Method	
Measurement	Pressure: 20~280mmHg
Range	Pulse: 40~190 / minute
Accuracy/	Pressure:± 3mmHg or 2% of reading
Calibration	Pulse: ± 5% of reading
Memory capacity	80 sets memories
Inflation	Automatic inflation by air pump
Deflation	Automatic liner pressure deflation valve
Pressure Release	Automatic exhaust valve
Sensor	Semiconductor pressure sensor
Power Supply	4 "AA" alkaline batteries
Measuring Interval	1 mmHg
Operating	+10°C~+40°C (50°F~104°F)
Temperature /	40%~85% R.H. maximum
Humidity	
Storage	-20°C~+50°C (-4 °F~122 °F)
Temperature /	15%~85% R.H. maximum
Humidity	28
Battery Life	Approx. 250 uses
(Alkaline batteries)	
Unit Weight	Approx. 400grams (not including
	batteries)
Cuff Circumference	Fits arm circumference 8.7" ~ 12.6"
Unit dimensions	Approx. 115 (I) x 125 (w) x 50 (h) mm
Accessories	Storage Case, Instruction Manual, Adapter

Specifications may be changed without prior notice.

# PERSONAL BLOOD PRESSURE'S RECORD

Name	A	ge Weight	<del></del>
Date	Time	SYS./DIA./PULSE	Remark
		A STATE	
	C.	3	

## **Conformity Standards:**

- Medical device electrical safety: EN 60601-1
- Electromagnetic Compatibility: EN 60601-1-2
- EN 1060-1, EN 1060-3
- Performance Standard: ANSA/AAMI SP10 (FDA 510K)



#### **Limited 1-year Warranty**

Coverage: Hi-Tech Trading USA, Inc. ("HiTT") warrants this product ("product") against defects in materials and workmanship under normal consumer use for 1-year from the date of purchase. HiTT, at its option, will at no charge repair, replace or refund the purchase price of this product should it not conform to this warranty. This limited warranty is a consumer's exclusive remedy, extends only to the first consumer purchaser, is not transferable and is valid only on products purchased by consumers in the United States or Canada.

#### **Exclusions:**

Normal Wear and Tear: Periodic maintenance, repair and replacement of parts due to normal wear and tear are excluded from coverage.

**Miscellaneous:** This warranty does NOT cover defects or damage that result from:

- (a) Improper operation, storage, misuse or abuse, accident or neglect, such as physical damage (cracks, scratches, etc.) to the surface of the Product resulting from misuse;
- (b) Contact with liquid, water, rain, extreme humidity or heavy perspiration, sand, dirt or the like, extreme heat, or food;
- (c) Use of the Product for commercial purposes or subjecting the Product to abnormal usage or conditions;
- (d) Service, installation, alteration, or modification in any way by someone other than HiTT and,
- (e) Other acts which are not the fault of HiTT.

**Obtaining Service:** To obtain service or information, please send email to **help@hittusa.com**. You will receive instructions on how to ship the Product, at your expense, to a HiTT Service Center. To obtain service, you must include a copy of your receipt.

#### Distributed by:

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**Customer support:** 

Email: help@hittusa.com Web: www.hittusa.com

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