Wrist Digital Blood Pressure Monitor

Model UB-511

Instruction Manual
Original

Manuel d'instructions
Traduction

Manual de Instrucciones
Traducción

Manuale di Istruzioni
Traduzione

1WMPD4000888C
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Dear Customers

Congratulations on purchasing a state-of-the-art A&D blood pressure monitor, one of the most advanced monitors available today. Designed for ease of use and accuracy, this monitor will facilitate your daily blood pressure regimen. **We recommend that you read through this manual carefully before using the device for the first time.**

### Preliminary Remarks

- This device conforms to the European Directive 93/42 EEC for Medical Products. This is made evident by the [CE0123](#) mark of conformity accompanied by the reference number of the designated authority.
- The device is designed for use on adults only, not newborns or infants.
- **Environment for use.**
  - The device is for use in the home healthcare environment.
- This device is designed to measure blood pressure and pulse rate of people for diagnosis.

### Precautions

- Precision components are used in the construction of this device. Extremes in temperature, humidity, direct sunlight, shock or dust should be avoided.
- Clean the device and cuff with a dry, soft cloth or a cloth dampened with water and a neutral detergent. Never use alcohol, benzene, thinner or other harsh chemicals to clean the device or cuff.
- Avoid tightly folding the cuff for long periods, as such treatment may shorten the life of the components.
- The device and cuff are not water resistant. Prevent rain, sweat and water from soiling the device and cuff.
- Measurements may be distorted if the device is used close to televisions, microwave ovens, cellular telephones, X-ray or other devices with strong electrical fields.
Used equipment, parts and batteries are not treated as ordinary household waste, and must be disposed of according to the applicable local regulations.

When reusing the device, confirm that the device is clean.

Do not modify the device. It may cause accidents or damage to the device.

To measure blood pressure, the wrist must be squeezed by the cuff hard enough to temporarily stop blood flow through the artery. This may cause pain, numbness or a temporary red mark to the arm. This condition will appear especially when measurement is repeated successively. Any pain, numbness, or red marks will disappear with time.

Contraindications

The following are precautions for proper use of the device.

- Do not apply the cuff to an arm with another medical electrical equipment attached. The equipment may not function properly.
- People who have a severe circulatory deficit in the arm must consult a doctor before using the device, to avoid medical problems.
- Do not self-diagnose the measurement results and start treatment by yourself. Always consult your doctor for evaluation of the results and treatment.
- Do not apply the cuff on an arm with an unhealed wound.
- Do not apply the cuff on an arm receiving an intravenous drip or blood transfusion. It may cause injury or accidents.
- Do not use the device where flammable gases such as anesthetic gases are present. It may cause an explosion.
- Do not use the device in highly concentrated oxygen environments, such as a high-pressure oxygen chamber or an oxygen tent. It may cause a fire or explosion.
Parts Identification

Display
Systolic pressure
Diastolic pressure
Pulse rate

Battery holder cover

START button

Carrying case

Alkaline batteries
(LR03 or AAA)

Cuff

Part of display

MEMORY

Pressure bar indicator
and
WHO classification indicator

I.H.B indicator
(Irregular heartbeat indicator)

Battery indicator

Heart mark

Systolic pressure
Diastolic pressure
Pulse rate
# Symbols

<table>
<thead>
<tr>
<th>Symbols</th>
<th>Function / Meaning</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>![standby-and-on-switch]</td>
<td>Standby and on switch</td>
<td>______</td>
</tr>
<tr>
<td>![battery-installation-guide]</td>
<td>Battery installation guide</td>
<td>______</td>
</tr>
<tr>
<td>![direct-current]</td>
<td>Direct current</td>
<td>______</td>
</tr>
<tr>
<td>![serial-number]</td>
<td>Serial number</td>
<td>______</td>
</tr>
<tr>
<td>![date-of-manufacture]</td>
<td>Date of manufacture</td>
<td>______</td>
</tr>
<tr>
<td>![type-bf-device]</td>
<td>Type BF: Device, cuff and tubing are designed to provide special protection against electrical shocks.</td>
<td>______</td>
</tr>
<tr>
<td>![heartbeat-indicator]</td>
<td>The indicator while measurement is in progress. It blinks while detecting the pulse. Measurement is in progress. Remain as still as possible.</td>
<td>______</td>
</tr>
<tr>
<td>![irregular-heartbeat-indicator]</td>
<td>Irregular Heartbeat indicator. (I.H.B.) The indicator that detects irregular heartbeats or any excessive body movement during the measurement.</td>
<td>______</td>
</tr>
<tr>
<td>![memory-indicator]</td>
<td>Previous measurements stored in MEMORY.</td>
<td>______</td>
</tr>
<tr>
<td>![full-battery]</td>
<td>The battery power indicator during measurement.</td>
<td>______</td>
</tr>
<tr>
<td>![low-battery]</td>
<td>The battery power is low when it blinks. Replace all batteries with new ones when the indicator blinks.</td>
<td>______</td>
</tr>
<tr>
<td>![err]</td>
<td>Unstable blood pressure due to movement during the measurement. The systolic and diastolic values are within 10 mmHg of each other. Try measurement again. Remain very still during the measurement.</td>
<td>______</td>
</tr>
<tr>
<td>![err-cuff]</td>
<td>The pressure value did not increase during inflation. The cuff is not fastened correctly. Fasten the cuff correctly, and try measurement again.</td>
<td>______</td>
</tr>
<tr>
<td>![e]</td>
<td>The pulse is not detected correctly.</td>
<td>______</td>
</tr>
<tr>
<td>![sys]</td>
<td>Systolic blood pressure in mmHg</td>
<td>______</td>
</tr>
<tr>
<td>Symbols</td>
<td>Function / Meaning</td>
<td>Recommended Action</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>DIA</td>
<td>Diastolic blood pressure in mmHg.</td>
<td></td>
</tr>
<tr>
<td>PUL./min</td>
<td>Pulse per minute</td>
<td></td>
</tr>
<tr>
<td>EC 0123</td>
<td>EC directive medical device label</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WEEE label</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Manufacturer</td>
<td></td>
</tr>
<tr>
<td>EC REP</td>
<td>EU-representative</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refer to instruction manual/booklet</td>
<td></td>
</tr>
</tbody>
</table>

## Using the Monitor

1. **Installing / Changing the Batteries**
   1. Slide the battery cover as shown to remove it from the device.

   ![Slide battery cover](image1)

   ![Insert batteries](image2)

   ![Slide cover back](image3)

   2. Insert two AAA / LR03 size batteries in the box, with positive (+) and negative (-) terminals matching those indicated on the cuff.

   ![Insert batteries correctly](image4)

   3. Slide the battery cover back on the device.
**CAUTION**

- Insert the batteries as shown on the cuff. If not, the device will not work.
- When **Low Battery** mark appears on the display, replace both batteries with new ones at the same time. Do not mix old and new batteries. It may cause the battery life to be shortened, or the device to malfunction.
- **Low Battery** mark does not appear when the batteries are drained.
- Battery life varies with ambient temperature and may be shorter at low temperatures.
- Remove batteries if the device is not to be used for a long period of time. The batteries may leak and cause a malfunction.
- Use the specified batteries only. The batteries provided with the device are for testing the monitor performance and may have a shorter life.

### Using the Monitor

#### 2. Fastening the Cuff

1. Wrap the cuff around your wrist about 1 cm above your hand as shown in the figure at the right.

2. Fasten the cuff tightly using the Velcro strip.

*Note: For proper measurements, fasten the cuff tightly and measure on a bare wrist.*
3. How to Take Proper Measurements

For best accuracy in blood pressure measurement:
• Sit comfortably on a chair. Rest your arm on the table. Do not cross your legs. Keep your feet on the floor and straighten your back.
• Relax for about 5 to 10 minutes before measurement.
• Raise your hand so that the cuff is at the same level as your heart.
• Remain still and keep quiet during measurement.
• Do not measure immediately after physical exercise or a bath. We recommend you to rest twenty or thirty minutes before taking measurement.
• Measure your blood pressure at about the same time every day.

4. Measurement

During measurement, it is normal for the cuff to feel very tight. (Do not be alarmed.)

5. After Measurement

After measurement, press the START button to turn off the power. Remove the cuff and record your data.

Note: The device is provided with an automatic power shut-off function which turns off the power automatically one minute after measurement. Allow at least three minutes between measurements on the same person.
Measurements

Note: The UB-511, once used, will provide an inflation appropriate to the user.

1. Sit comfortably with the cuff at the same level as your heart and relax.

2. Press the START button.
   The average recorded blood pressures and data number are displayed briefly.
   Then the display changes as indicated in the figure on the right as measurement begins.
   The cuff starts to inflate. It is normal for the cuff to feel very tight.

Note: If you wish to stop inflation at any time, press the START button again.

3. The measurement starts automatically when pressurizing starts, and the (heart mark) blinks.

4. When measurement is complete, the systolic and diastolic pressure readings and pulse rate are displayed.
   The cuff exhausts the remaining air and completely deflates automatically.

5. Press the START button again to turn off the power.
   Remove the cuff.

Note: The device is provided with an automatic power shut-off function.
   Allow at least three minutes between measurements on the same person.
Measurements

Notes For Proper Measurement

☐ Sit down in a comfortable position. Place the arm to be used for the measurement on a table or other support so that the center of the cuff will be at the same height as your heart.

☐ Relax for about five or ten minutes before taking a measurement. If you are excited or depressed by emotional stress, the measurement will reflect this stress as a higher (or lower) than normal blood pressure reading and the pulse reading will usually be faster than normal.

☐ An individual's blood pressure varies constantly, depending on what they are doing and what they have eaten. What you drink can have a very strong and rapid effect on your blood pressure.

☐ This device bases its measurements on the heartbeat. If you have a very weak or irregular heartbeat, the device may have difficulty determining your blood pressure.

☐ Should the device detect a condition that is abnormal, it will stop the measurement and display an error symbol. See page 5 for the description of symbols.

☐ This blood pressure monitor is intended for use by adults only. Consult with your physician before using this device on a child. A child should not use this device unattended.

Operation Mode

1. Normal measurement with storing data
   (Refer to page 9)
   Press the START button.
   Blood pressure is measured and data is stored within the device.
   The device can store the last thirty sets of data.

2. Recalling data
   Press and hold the START button to recall the data.
   Stored data are automatically displayed in order from the last data.

3. Clearing data
   Remove batteries to clear all data. Re-install them again.
What Is An Irregular Heartbeat?

Model UB-511 blood pressure monitor provides a blood pressure and pulse rate measurement even when an irregular heartbeat occurs. An irregular heartbeat is defined as a heartbeat that varies by 25% from the average of all heartbeats during the blood pressure measurement. It is important that you be relaxed, remain still and do not talk during measurements.

*Note:* We recommend contacting your physician if you see this 💔 indicator frequently.

Pressure Bar Indicator

The indicator monitors the progress of pressure during measurement.

---

*Pressurizing*

- Inflation in progress
  - Measurement in progress
  - Inflation complete
About Blood Pressure

What Is Blood Pressure?

Blood pressure is the force exerted by blood against the walls of the arteries. Systolic pressure occurs when the heart contracts. Diastolic pressure occurs when the heart expands. Blood pressure is measured in millimeters of mercury (mmHg). One’s natural blood pressure is represented by the fundamental pressure, which is measured first thing in the morning while one is still at rest and before eating.

What Is Hypertension And How Is It Controlled?

Hypertension, an abnormally high arterial blood pressure, if left unattended can cause many health problems including stroke and heart attack. Hypertension can be controlled by altering lifestyle, avoiding stress, and with medication under a doctor’s supervision.
To prevent hypertension or keep it under control:

- Do not smoke
- Exercise regularly
- Reduce salt and fat intake
- Have regular physical checkups
- Maintain proper weight

Why Measure Blood Pressure At Home?

Blood pressure measured at a clinic or doctor's office may cause apprehension and can produce an elevated reading, 25 to 30 mmHg higher than that measured at home. Home measurement reduces the effects of outside influences on blood pressure readings, supplements the doctor's readings and provides a more accurate, complete blood pressure history.

WHO Blood Pressure Classification

Standards to assess high blood pressure, without regard to age, have been established by the World Health Organization (WHO), as shown in the chart on the right.

Blood Pressure Variations

An individual’s blood pressure varies greatly on a daily and seasonal basis. It may vary by 30 to 50 mmHg due to various conditions during the day. In hypertensive individuals variations are even more pronounced. Normally, the blood pressure rises while at work or play and falls to its lowest levels during sleep. So, do not be overly concerned by the results of one measurement.

Take measurements at the same time every day using the procedure described in this manual to get to know your normal blood pressure. Regular readings give a more comprehensive blood pressure history. Be sure to note date and time when recording your blood pressure. Consult your doctor to interpret your blood pressure data.
## Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Reason</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Batteries are drained.</td>
<td>Replace all batteries with new ones.</td>
<td></td>
</tr>
<tr>
<td>Battery terminals are not in the correct position.</td>
<td>Reinstall the batteries with negative and positive terminals matching those indicated on the battery compartment.</td>
<td></td>
</tr>
<tr>
<td>Battery voltage is too low.</td>
<td>Replace both batteries with new ones.</td>
<td></td>
</tr>
<tr>
<td>The cuff is not fastened properly.</td>
<td>Fasten the cuff correctly.</td>
<td></td>
</tr>
<tr>
<td>You moved your arm or body during the measurement.</td>
<td>Make sure you remain very still and quiet during the measurement.</td>
<td></td>
</tr>
<tr>
<td>The cuff position is not correct.</td>
<td>Sit comfortably and still. Raise your hand so that the cuff is at the same level as your heart.</td>
<td></td>
</tr>
<tr>
<td>If you have a very weak or irregular heart beat, the device may have difficulty in determining your blood pressure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The value is different from that measured at a clinic or doctor’s office.</td>
<td>See “Why measure blood pressure at home?”.</td>
<td></td>
</tr>
<tr>
<td>Remove the batteries. Place them back properly and try measurement again.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: If the actions described above do not solve the problem, contact the dealer. Do not attempt to open or repair this product yourself, as any attempt to do so will make your warranty invalid.
# Maintenance

Do not open the device. It uses delicate electrical components and an intricate air unit that could be damaged. If you cannot fix the problem using the troubleshooting instructions, request service from your dealer or from the A&D service group. The A&D service group will provide technical information, spare parts and units to authorized dealers.

The device was designed and manufactured for a long service life. However it is generally recommended to have the monitor inspected every 2 years, to ensure proper functioning and accuracy. Please contact either your authorized dealer or A&D for maintenance.

## Technical Data

<table>
<thead>
<tr>
<th>Type</th>
<th>UB-511</th>
<th>Clinical test</th>
<th>According to ANSI / AAMI SP-10 1992</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement method</td>
<td>Oscillometric measurement</td>
<td>Applied part</td>
<td>Cuff Type BF</td>
</tr>
<tr>
<td>Measurement range</td>
<td>Pressure: 20 – 280 mmHg, Pulse: 40 – 180 beats / minute</td>
<td>Useful life</td>
<td>Device: 5 years (when used six times a day)</td>
</tr>
<tr>
<td>Measurement accuracy</td>
<td>Pressure: ±3 mmHg, Pulse: ±5 %</td>
<td>EMC</td>
<td>IEC 60601-1-2: 2007</td>
</tr>
<tr>
<td>Power supply</td>
<td>2 x 1.5V alkaline batteries (LR03 or AAA)</td>
<td>Operating conditions</td>
<td>+10°C to +40°C / 15%RH to 85 %RH 800hPa to 1060hPa</td>
</tr>
<tr>
<td>Number of measurements</td>
<td>Approx. 400 measurements, when AAA Alkaline batteries are used, with pressure value of 170 mmHg at room temperature of 23°C</td>
<td>Transport/storage conditions</td>
<td>-10°C to +60°C / 15%RH to 85 %RH</td>
</tr>
<tr>
<td>Wrist circumference</td>
<td>13.5 – 21.5 cm</td>
<td>Dimensions</td>
<td>Approx. 63 [W] x 56 [H] x 21 [D] mm</td>
</tr>
<tr>
<td>Classification</td>
<td>Internally powered ME equipment Continuous operation mode</td>
<td>Weight</td>
<td>Approx. 82 g, excepting batteries</td>
</tr>
</tbody>
</table>

Note: Specifications are subject to change for improvement without prior notice. 
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