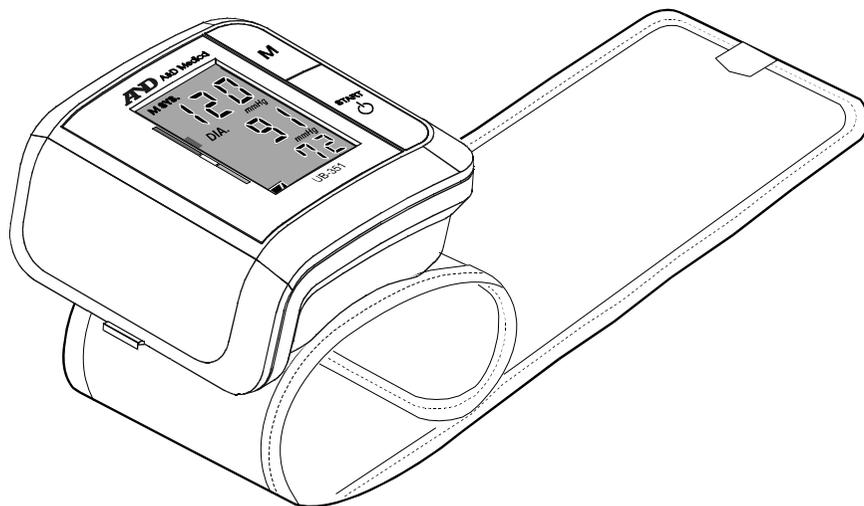


AND A&D Medical

Wrist Digital Blood Pressure Monitor

Model UB-351



Instruction Manual
Original

Manuel d'instructions
Traduction

Manual de Instrucciones
Traducción

Manuale di Istruzioni
Traduzione

使用手冊
翻譯

1WMPD4002389B

ENGLISH

FRANÇAIS

ESPAÑOL

ITALIANO

中文

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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 **CE**₀₁₂₃ mark of conformity. (0123: The reference number to the involved notified body)
- 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.

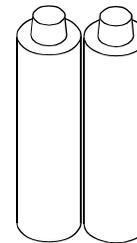
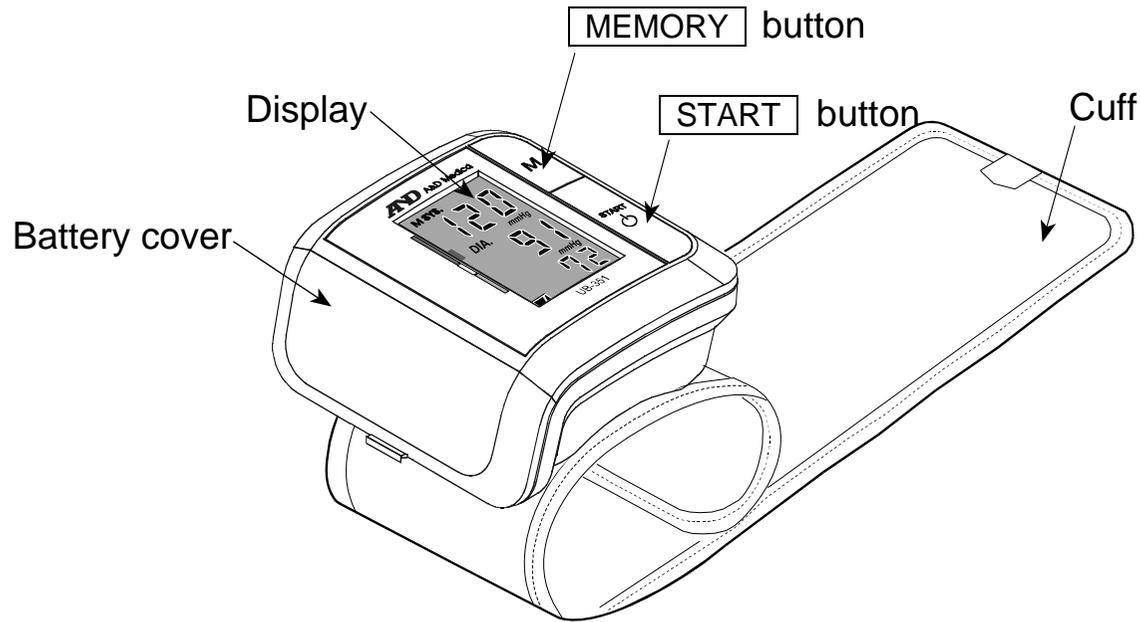
- ❑ When reusing the device, confirm that the device is clean.
- ❑ Do not modify the device. It may cause accidents or damage to the device.
- ❑ To measure blood pressure, the wrist must be squeezed by the cuff hard enough to temporarily stop blood flow through the artery. This may cause pain, numbness or a temporary red mark to the wrist. This condition will appear especially when measurement is repeated successively.
Any pain, numbness, or red marks will disappear with time.

Contraindications

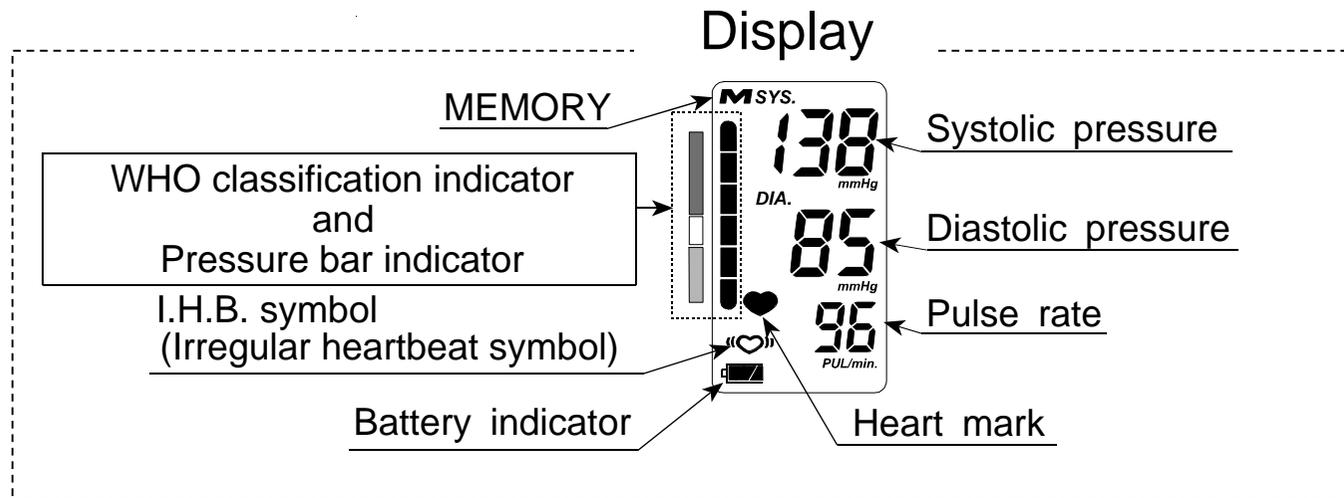
The following are precautions for proper use of the device.

- ❑ 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



Alkaline batteries
(LR03 or AAA)



Symbols

Symbols that are printed on the device case

| Symbols | Function / Meaning | Recommended Action |
|--|--|--------------------|
|  | Standby and Turn the device on | _____ |
|  | Battery installation guide | _____ |
|  | Direct current | _____ |
| SN | Serial number | _____ |
| 2012  | Date of manufacture | _____ |
|  | Type BF: Device and cuff are designed to provide special protection against electrical shocks. | _____ |
|  | EC directive medical device label | _____ |
|  | WEEE label | _____ |
|  | Manufacturer | _____ |
|  | EU-representative | _____ |
|  | Refer to instruction manual / booklet | _____ |

Symbols

Symbols that appear on the display

| Symbols | Function / Meaning | Recommended Action |
|--|---|---|
|  | Appears while measurement is in progress. It blinks when the pulse is detected. | Measurement is in progress. Remain as still as possible. |
|  | Irregular Heartbeat symbol (I.H.B.) Appears when an irregular heartbeat is detected. It may light when a very slight vibration like shivering or shaking is detected. | _____ |
| M | Previous measurements stored in MEMORY. | _____ |
|  Full Battery | The battery power indicator during measurement. | _____ |
|  Low Battery | The battery is low when it blinks. | Replace all batteries with new ones when the indicator blinks. |
| <i>Err 1</i> | Unstable blood pressure due to movement during measurement. | Take another measurement. |
| <i>Err 2</i> | Unstable blood pressure due to movement during measurement. | Remain still during measurement. |
| | Inflation is not sufficient. | If your systolic reading exceeds 150 mmHg, refer to “For Those Whose Systolic Pressure is Over 150 mmHg” on page 11 |
| <i>Err CUF</i> | The cuff is not applied correctly. | Apply the cuff correctly, and take another measurement. |
| <i>Err</i> | The pulse is not detected correctly | |
| SYS. | Systolic blood pressure in mmHg | _____ |
| DIA. | Diastolic blood pressure in mmHg. | _____ |
| PUL./min. | Pulse per minute | _____ |

Operation Mode

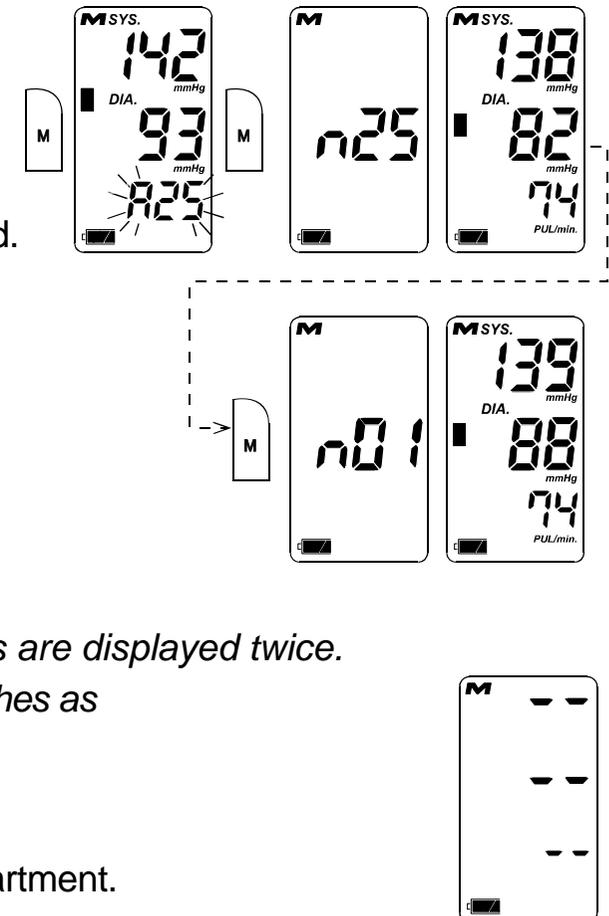
1. Normal Measurement

Press the **START** button. Blood pressure is measured and the data is stored in memory. This device can store the last 90 measurements in memory.

2. Recalling the Memory Data

Measurements stored in memory are assigned an index number in the order of the newest to the oldest. The oldest reading displays as “n01”.

1. Press the **MEMORY** button. You will see the average blood pressure displayed.
2. Press the **MEMORY** button again. You will see the index number of the most recent reading followed by the measurement data.
3. If the **MEMORY** button is pressed again, the UB-351 will display the data starting with the chronologically recent data in memory.
4. If you want to retrieve other measurements in memory, press and release the **MEMORY** button repeatedly until the desired index number is reached (e.g. n14). The measurement will then be displayed.



Notes: The device will turn off automatically after the index number and results are displayed twice.

If there are no measurements stored in memory, the display indicates dashes as shown to the right.

3. Deleting all Data Stored in Memory

To delete all data stored in memory, remove the batteries from the battery compartment.

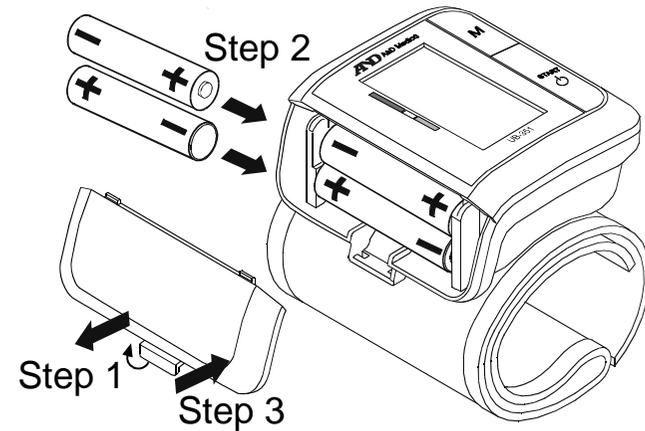
4. For Those Whose Systolic Pressure is Over 150 mmHg

Refer to page 11 for measurement with the desired systolic pressure.

Using the Monitor

Installing / Changing the Batteries

1. Remove the battery cover.
2. Remove the used batteries and insert new batteries into the battery compartment as shown, taking care that the polarities (+ and -) are correct. Use only LR03 or AAA batteries.
3. Attach the battery cover.



⚠ CAUTION

- Insert the batteries as shown in the battery compartment. If installed incorrectly, the device will not work.
- When  (LOW BATTERY mark) blinks on the display, replace all batteries with new ones. Do not mix old and new batteries. It may shorten the battery life, or cause the device to malfunction.
-  (LOW BATTERY mark) does not appear when the batteries are drained.
- The battery life varies with the ambient temperature and may be shorter at low temperatures.
- Use the specified batteries only. The batteries provided with the device are for testing monitor performance and may have a limited life.
- Remove the batteries if the device is not to be used for a long period of time. The batteries may leak and cause a malfunction.

Note: Stored measurements will be deleted if the batteries are removed.

Using the Monitor

Applying 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.

How to Take Accurate Measurements

For the most accurate 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 five to ten 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. Rest for twenty or thirty minutes before taking the measurement.
- Try to measure your blood pressure at about the same time every day.

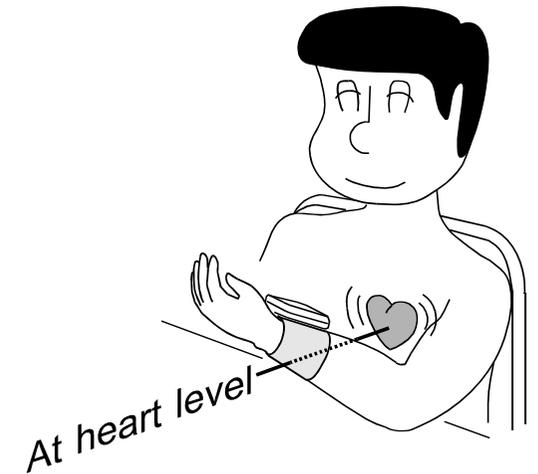
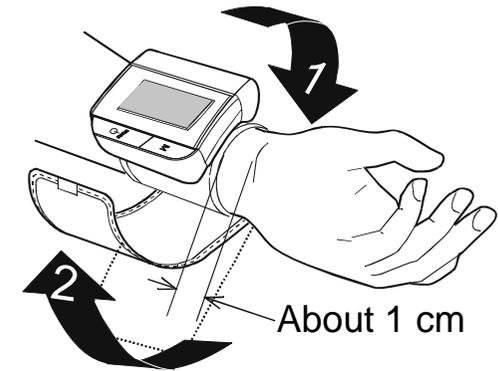
Measurement

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

After Measurement

After measurement, press the **START** button to turn the device off. Or after one minute of non-operation, the device will turn off automatically. Remove the cuff and record your data.

Note: Allow at least three minutes between measurements on the same person.



Measurements

Before measurement, read “Notes for Accurate Measurement” on page 11.

Normal Measurement

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

2. Press the **START** button.
All of the display segments are displayed.
Then the display changes, as indicated in the figure at 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. When inflation is complete, deflation starts automatically and the  (heart mark) appears to indicate that the measurement is in progress. Once the pulse is detected, the mark blinks with each pulse beat.

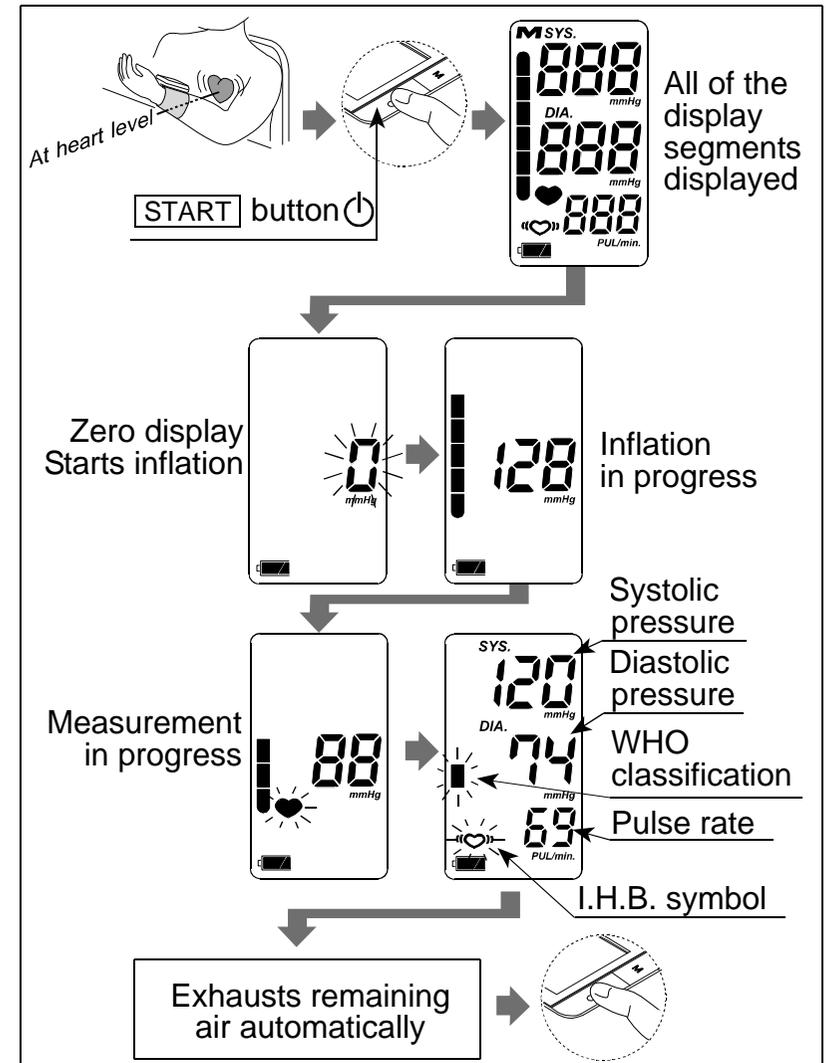
4. When the measurement is complete, the systolic and diastolic pressure readings and pulse rate are displayed.

The cuff exhausts the remaining air and completely deflates automatically.

*Note: If the **MEMORY** button is pressed while the measurement result is displayed, the reading is not memorized.*

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

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

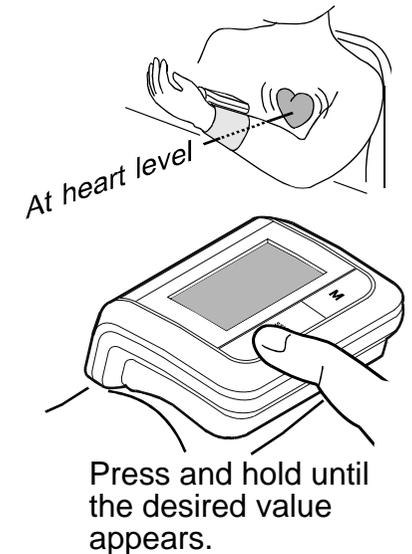


Measurements

For Those Whose Systolic Pressure is Over 150 mmHg

1. Wrap the cuff around your wrist.
Raise your hand so that the cuff is at the same level as your heart.
2. Press and hold the **START** button until a number about 30 to 40 mmHg higher than your expected systolic pressure appears.
3. When the desired number is reached, release the **START** button. Measurement will begin.

Note: The operation above is required only when you measure your blood pressure for the first time. The next time, the UB-351 will provide an appropriate inflation, so measure your blood pressure as described on page 10.

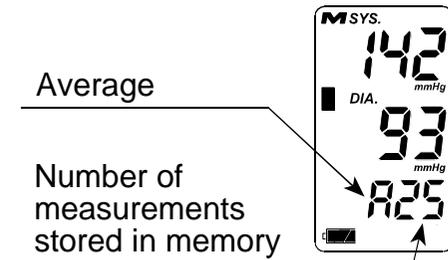


Notes for Accurate Measurement

- ❑ Sit down in a comfortable position. Place your arm on a table or other support. Raise your hand so that the cuff is at the same level as your heart.
- ❑ Relax for about five to 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. Refer to page 6 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.

Recalling the Average Reading

The UB-351 provides an average blood pressure reading based on the total measurements stored in memory. Press the **MEMORY** (“M”) button to see the average blood pressure reading. The average blood pressure reading and the number of measurements stored in memory will appear.



Recalling the Memory Data

The UB-351 automatically stores up to 90 blood pressure and pulse measurements in memory. Measurements stored in memory are assigned an index number in the order of the newest to the oldest. The oldest reading displays as “n01”. To retrieve readings, follow these simple steps:

1. When the display screen is blank, press the **MEMORY** button. You will see the average blood pressure reading displayed.
Press the **MEMORY** button again. You will see the index number of the most recent reading followed by the measurement data.
2. If you want to retrieve other measurements in memory, press and release the **MEMORY** button repeatedly until the desired index number is reached (e.g. n14). The measurement will then be displayed.

*Notes: The device will turn off automatically after the index number and results are displayed twice.
If there are no measurements stored in memory, the display indicates dashes as shown to the right.*



Deleting all Data Stored in Memory

To delete all data stored in memory, remove the batteries from the battery compartment.

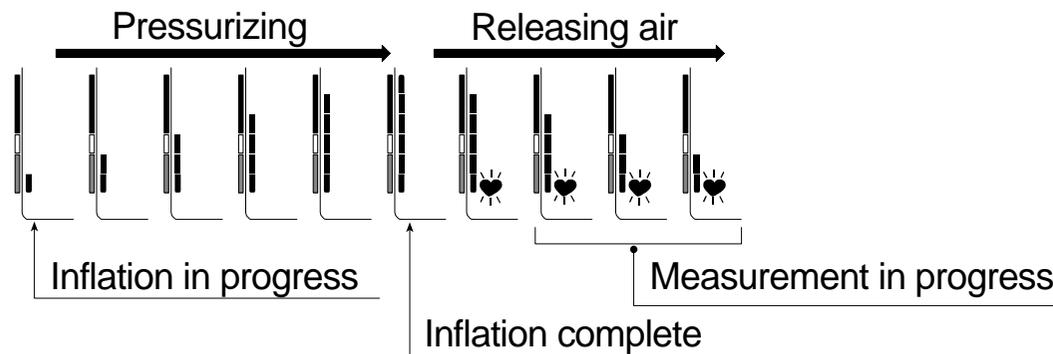
What is an Irregular Heartbeat?

Model UB-351 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 are relaxed, remain still and do not talk during measurements.

Note: We recommend contacting your physician if you see this «(♥)» symbol frequently.

Pressure Bar Indicator

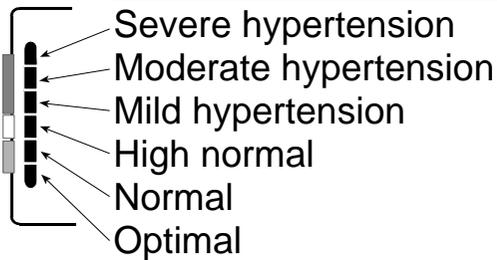
The indicator monitors the progress of pressure during measurement.



WHO Classification Indicator

Each six segments of the bar indicator correspond to the WHO blood pressure classification described on the next page.

WHO Classification Indicator



■ : The indicator displays a segment, based on the current data, corresponding to the WHO classification.

Example

| Moderate hypertension | Mild hypertension | High normal |
|-----------------------|-------------------|-------------|
| | | |

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:

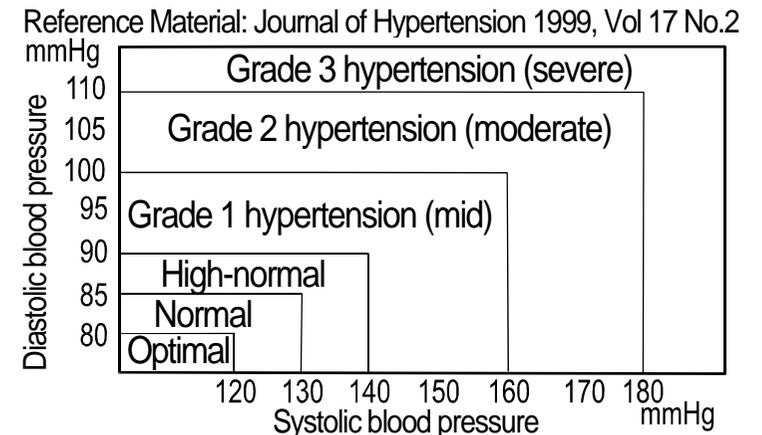
- Do not smoke
- Reduce salt and fat intake
- Maintain proper weight
- Exercise regularly
- Have regular physical checkups

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

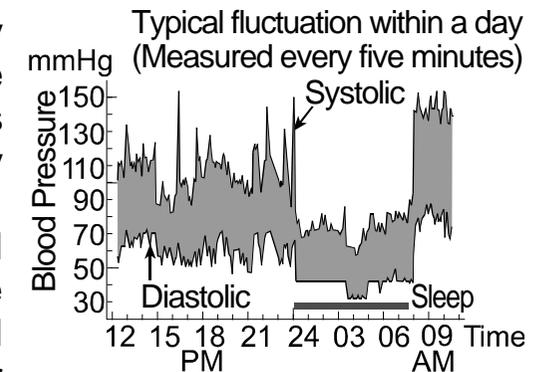
Standards to assess high blood pressure, without regard to age, have been established by the World Health Organization (WHO), as shown in the chart at the right.



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 the date and time when recording your blood pressure. Consult your doctor to interpret your blood pressure data.



Troubleshooting

| Problem | Possible Reason | Recommended Action |
|--|--|---|
| Nothing appears in the display, even when the device is turned on. | Batteries are drained. | Replace all batteries with new ones. |
| | Battery terminals are not in the correct position. | Reinstall the batteries with negative and positive terminals matching those indicated in the battery compartment. |
| The cuff does not inflate. | Battery voltage is too low.  (LOW BATTERY mark) blinks. If the batteries are drained completely, the mark does not appear. | Replace all batteries with new ones. |
| The device does not measure. Readings are too high or too low. | The cuff is not applied properly. | Apply the cuff correctly. |
| | You moved your arm or body during the measurement. | Make sure you remain very still and quiet during the measurement. |
| | The cuff position is not correct. | Sit comfortably and still. Raise your hand so that the cuff is at the same level as your heart. |
| | _____ | If you have a very weak or irregular heart beat, the device may have difficulty in determining your blood pressure. |
| Other | The value is different from that measured at a clinic or doctor's office. | Refer to "Why Measure Blood Pressure at Home?". |
| | _____ | Remove the batteries. Place them back properly and try measurement again. |

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, contact the authorized dealer in your area or our customer service department. The A&D customer service 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 device inspected every 2 years, to ensure proper functioning and accuracy. Please contact the authorized dealer in your area or A&D for maintenance.

Technical Data

| | | | |
|------------------------|---|------------------------------|--|
| Type | UB-351 | Applied part | Cuff Type BF  |
| Measurement method | Oscillometric measurement | Useful life | Device: 5 years (when used six times a day) |
| Measurement range | Pressure: 20 – 280 mmHg Pulse: 40 – 180 beats / minute | Clinical test | According to ANSI / AAMI SP-10 1992 |
| Measurement accuracy | Pressure: ± 3 mmHg Pulse: $\pm 5\%$ | EMC | IEC 60601-1-2: 2007 |
| Power supply | 2 x 1.5V alkaline batteries (LR03 or AAA) | Memory | Last 90 measurements |
| Number of measurements | Approx. 250 measurements, when AAA Alkaline batteries are used, with pressure value of 170 mmHg at room temperature of 23°C | Operating condition | +10°C to +40°C / 15%RH to 85 %RH 800hPa to 1060hPa |
| Wrist circumference | 13.5 – 21.5 cm | Transport/storage conditions | -20°C to +60°C / 10%RH to 95 %RH |
| Classification | Internally powered ME equipment Continuous operation mode | Dimensions | Approx. 64 [W] x 38 [H] x 72 [D] mm |
| | | Weight | Approx. 102 g, excluding the batteries |

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

EMC table information is listed on our website: http://www.aandd.jp/products/manual/medical/emc_en.pdf

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