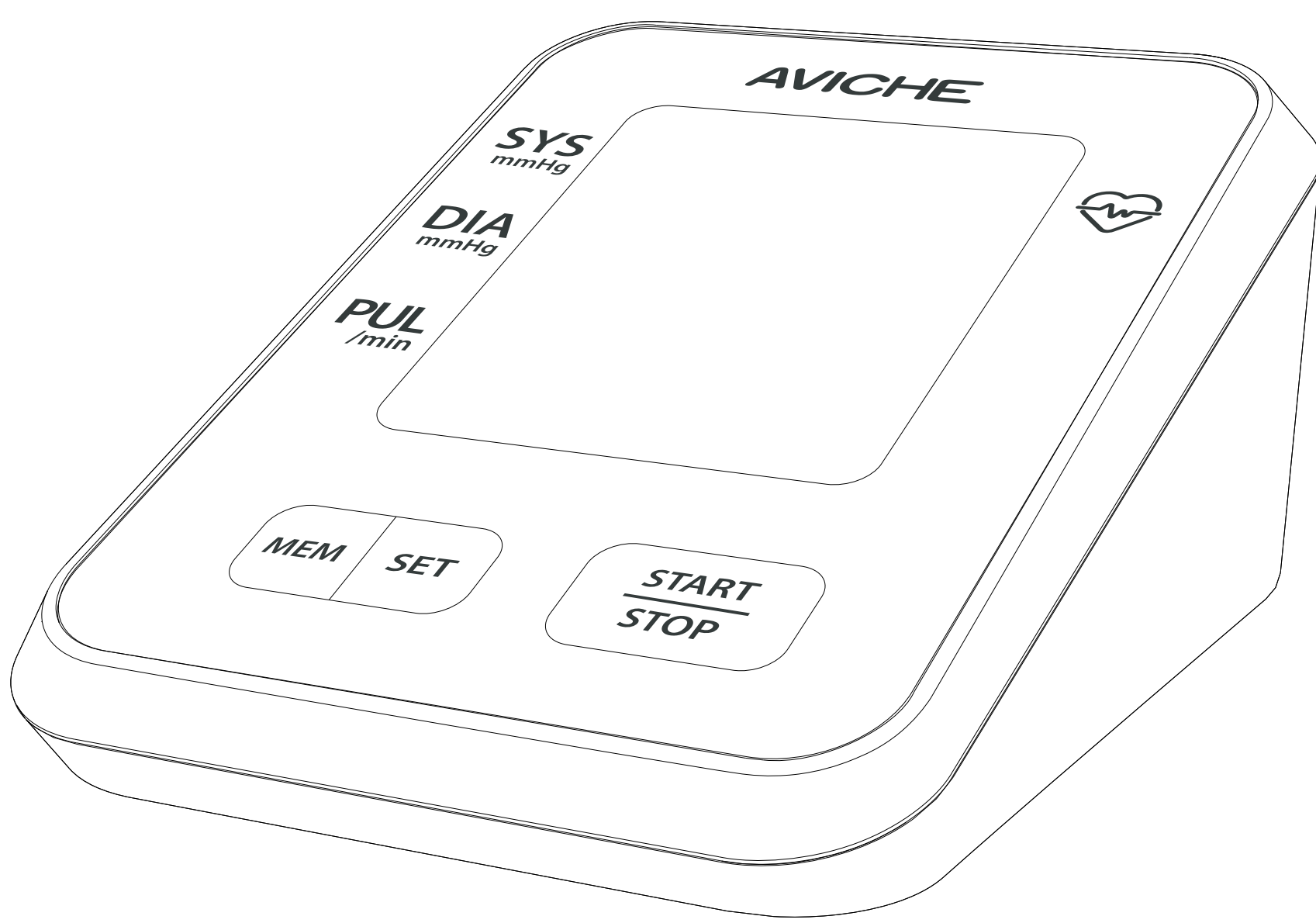


User Manual

Automatic Digital Blood Pressure Monitor

HD10 | Version 3.0.2



Attention: The user manual is in the packaging, please read all instructions before using and keep them properly for later use.

Issued time: January, 2022

Introduction

Thank you for purchasing our product. It is used to measure human blood pressure and pulse, help people to know their health status. With automatic control measurement technique, This digital blood pressure monitor will inflate intelligently according to people's systolic pressure and arm circumference, reducing the uncomfortable feeling caused by excessive pressure.

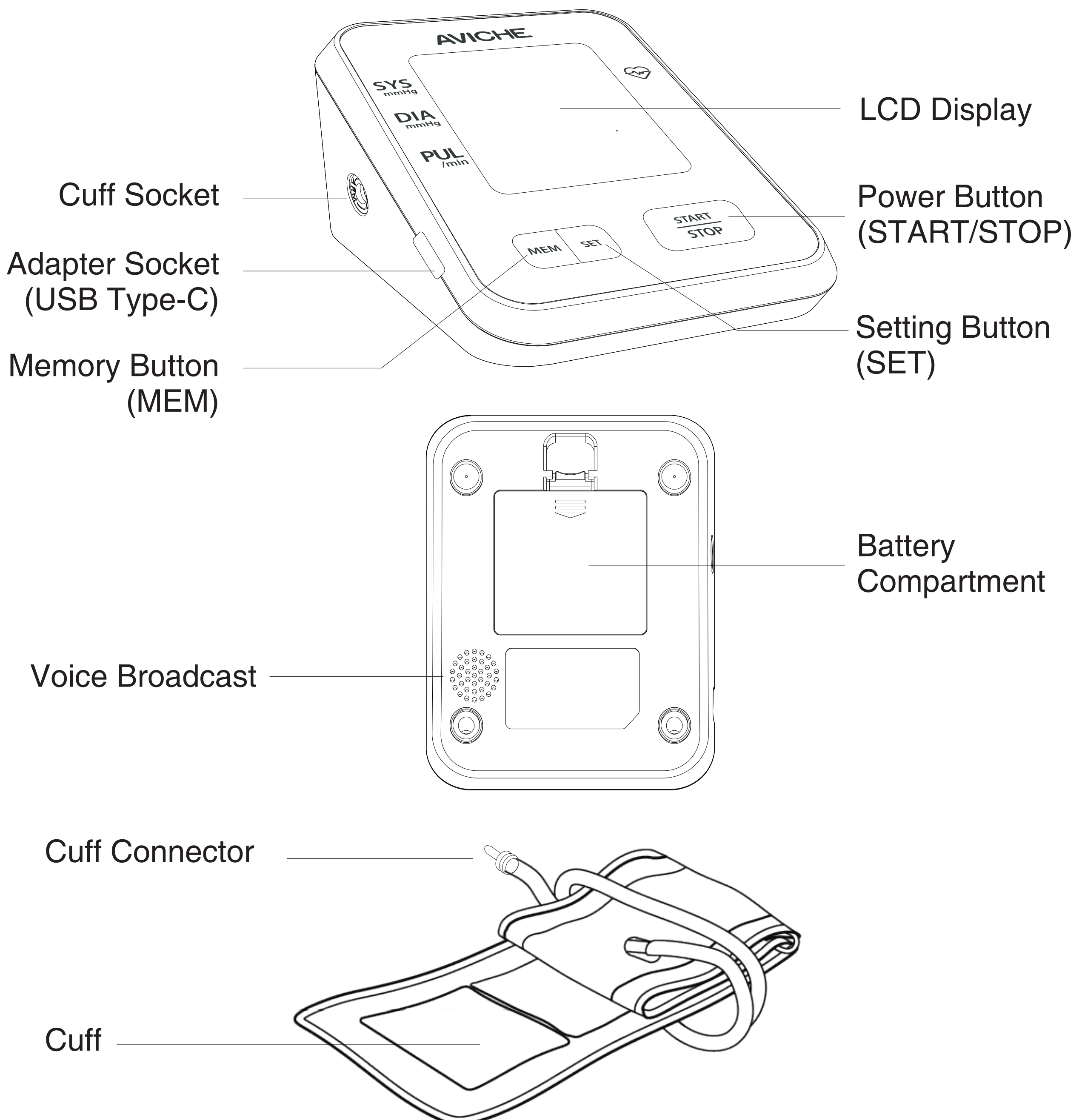
Indication for Use

The Automatic Digital Blood Pressure Monitor is intended to measure the blood pressure and pulse rate of adult at household. (Not suitable for neonate, pregnancy or pre-eclampsia).

Product Features

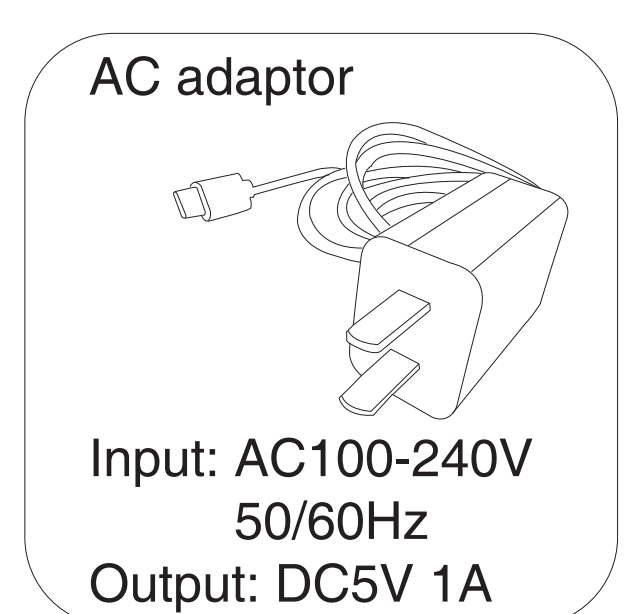
- LCD backlit display
- Automatic intelligent inflation
- Upper arm blood pressure measurement
- Two memories, each with 90 measured values
- Indicating average of the latest 3 readings
- Hypertension alarm
- Voice broadcast
- Date/Time display
- Alarm clock
- Adapter is optional

Unit Description



⚠ Attention if use AC adapter

1. If user needs to purchase the adapter, please refer to the specifications shown on the right figure.
2. Please use the power source in 100-240V.
3. Do not pull adapter with wet hands.
4. The standard packaging is without adapter, you can buy it separately if you need.



Icons in Display

Memory group		Date/Time
Systolic pressure		Voice broadcast
Diastolic pressure		Blood pressure classification
Pulse		
Irregular heart beat		Memory number

Display Symbols

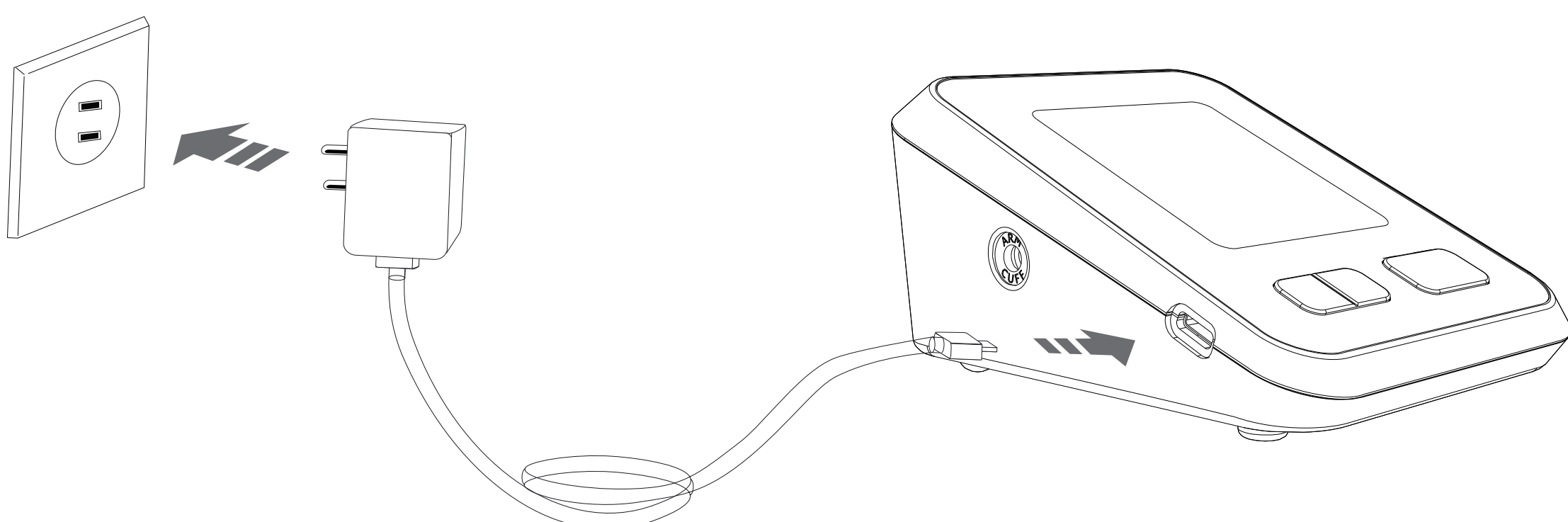
	Storing or reading memory symbol		
	Low battery symbol, please recharge		
	Alarm clock		Hypertension classification
	Voice function		Pulse symbol
	Memory group 1/2		Irregular heart beat
	Average of latest 3 readings		
	Inflation has failed		
	Air pressure is too high		
	No pulse detected		
	Blood pressure cannot be detected due to interference		
	The measurement result is not correct		
	Inflatable channel is blocked		

Battery Recharging

1. This device is powered by a lithium battery. Please ensure that the power is sufficient when using.
2. When in use, if a battery symbol appears on the screen and "low battery" is broadcast, it means that the battery is low and needs to be recharged.
3. When in use, if a battery symbol appears and turns off, it means the battery is exhausted and need to recharge it immediately.
4. Recharging Methods:
 - Connect one end of the USB power cable to the adapter and the other end to the charging port of the device, as shown in the figure.
 - The battery symbol blinks when charging, and the battery symbol stops blinking when charging is complete.

⚠️ Precautions for the use of lithium batteries :

- Do not place devices with lithium batteries near fire.
- Do not disassemble or replace the battery or squeeze the battery with hard objects.
- Please recharge the battery in time when the battery is low.
- Do not use to measure blood pressure while battery is recharging.
- In order to prolong the service life of the lithium battery, it is recommended to keep more than half of the power.
- When the device is not used for a long time (more than 6 months), it is easy to cause the passivation of the electrode material and lead to the deterioration of the battery performance. It is recommended to use it frequently.
- Please dispose of the battery according to the relevant environmental protection regulations of your location.
- Specifications of battery adapter: input AC100V-240V 50/60Hz 0.4A, and comply with GB9706.1-2007 standard.



Setting Date, Time, Voice, Unit, and Alarm Clock

Right time setting can help you to record every measurement time correctly.

1. Press **SET** button for 3 seconds, then enter the setting interface, the year in display starts to flash (Figure 1).
2. Press **MEM** button to adjust year, the figure will be added for every press, circulate between 00 to 99.
3. Press **SET** to confirm when appear the right year, then enter to month and date setting (Figure 2).
4. Repeat above three procedure to set month, date and time (Figure 1. 3).



Figure 1



Figure 2

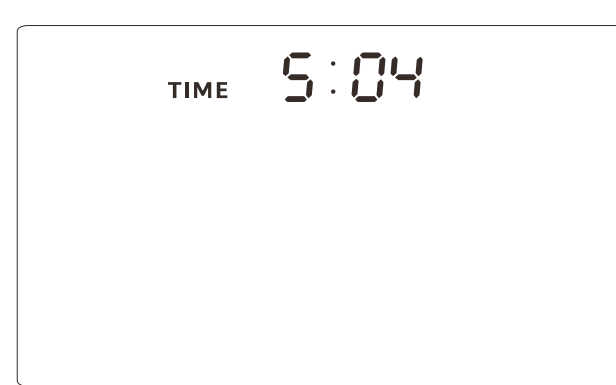
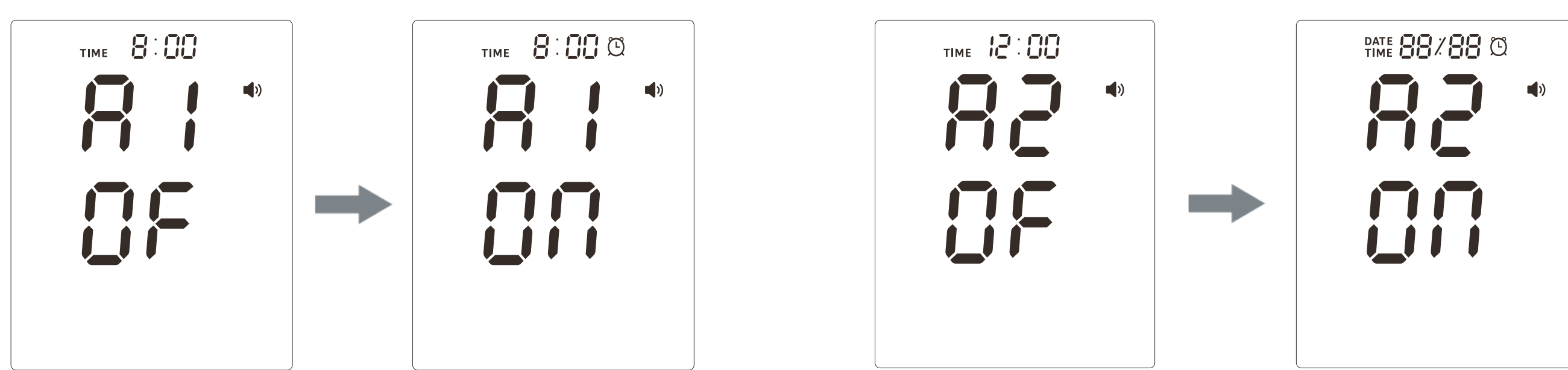


Figure 3

- Set voice broadcast function. After setting the time, it will automatically enter the voice broadcast settings, press **MEM** button to open or close the voice broadcast function.
- mmHg and kPa unit conversion setting. After setting the voice, it will automatically enter the unit setting and user can press **MEM** button to adjust mmHg to kPa.

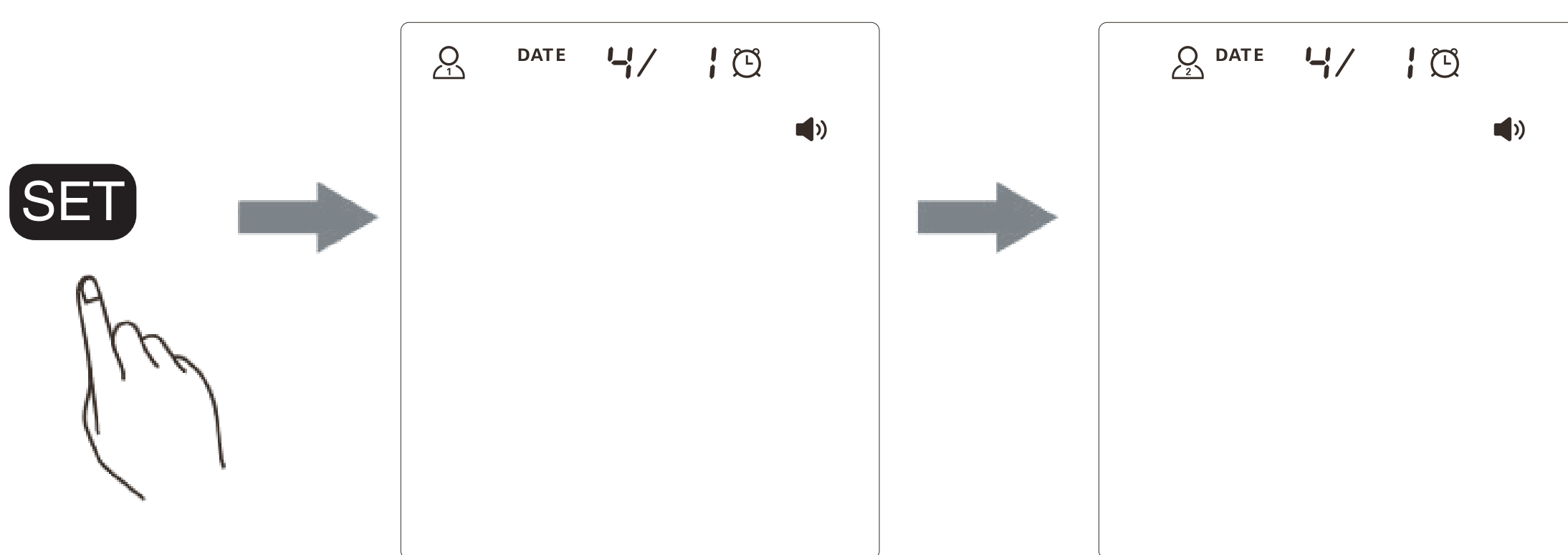


- 3 groups of alarm clock remind you to measure blood pressure on time, after unit setting it automatically enter A1 alarm setting, press **MEM** to adjust ON or OFF, press **SET** button to confirm, after finish setting, enter A2 alarm time setting, repeat the above steps, can set A2, A3 alarm time setting.

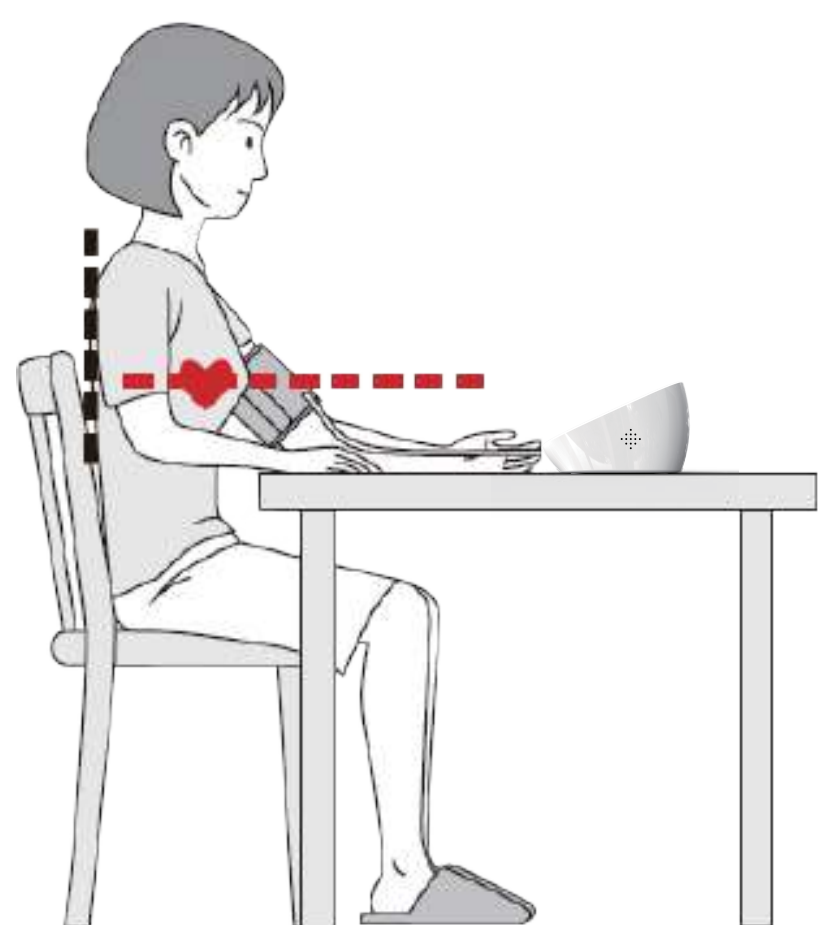


Setting Memory Space

- Press **SET** button to choose memory ① or ② .



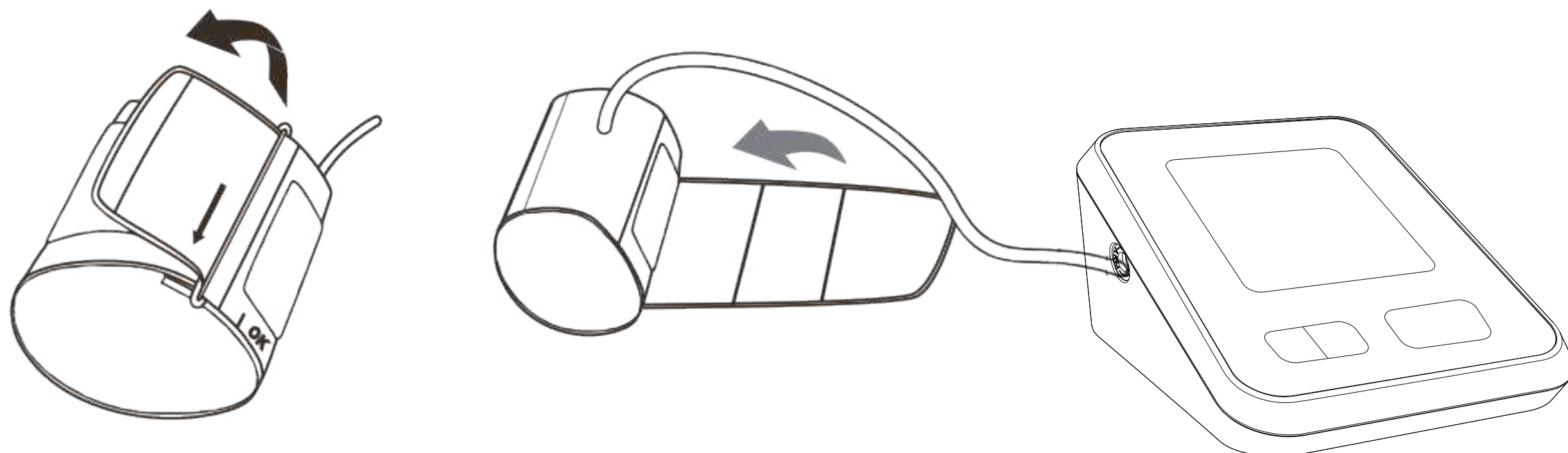
Measuring Position



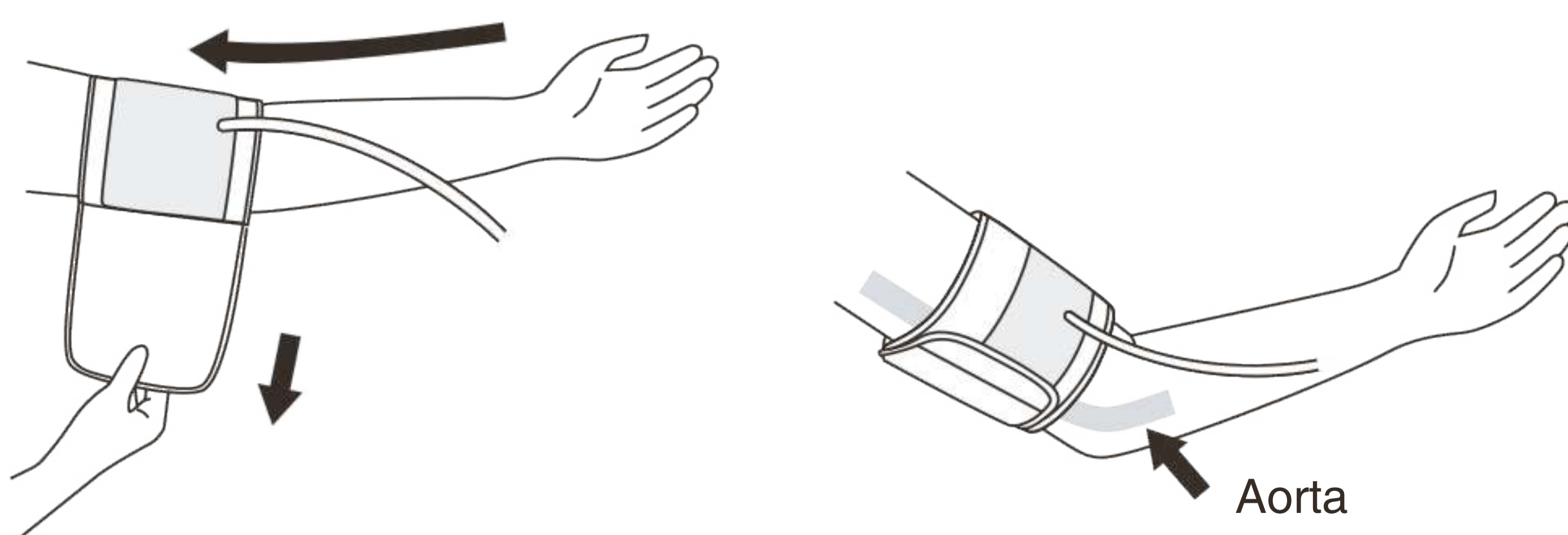
Take a seat and two feet flat on the floor, place your arm on the table comfortably, palms up, ensure that the arm cuff is at heart height. Keep still and do not talk during the measurement.

Fitting the Cuff

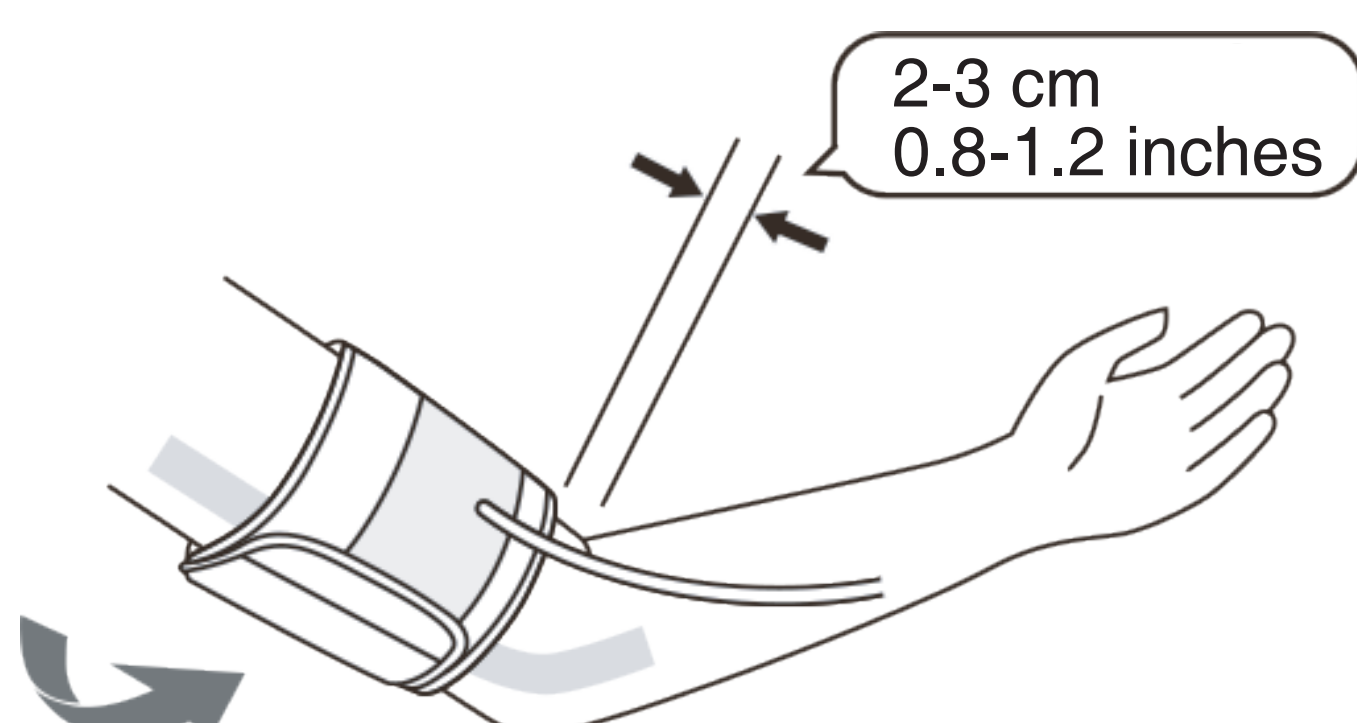
- Open arm cuff, slide the open end of cuff through the metal bracket so that the velcro fastener is on outside, insert the cuff tube connector solidly into blood pressure monitor body.



- Slide the cuff over the left upper arm, wrapped the arm cuff tightly, artery indicator close to artery of upper arm (the inner arm).

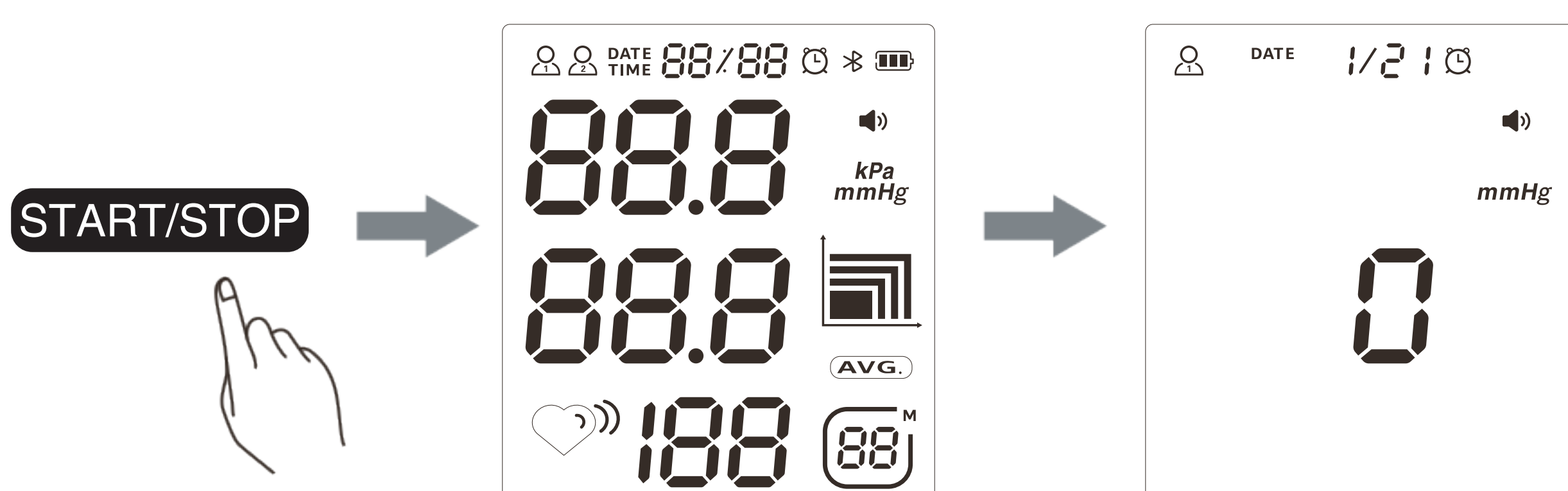


3. Left palm up, the cuff should be 2-3cm above the elbow crease.

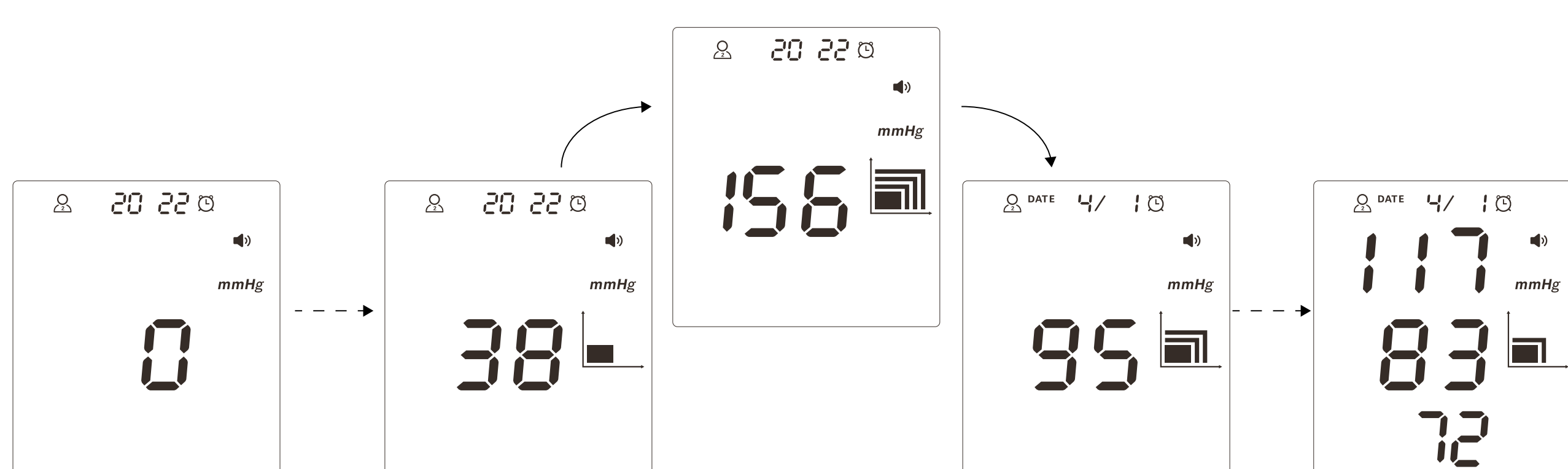


Measuring Blood Pressure

1. Wrap the arm cuff properly on the arm (refer to cuff using).
2. Press **START/STOP** button display full screen, ready to measure.



3. Press **START/STOP** button to start measuring, the device will inflate until the pressure is suitable for you, and then deflate, keep still and quiet during measurement. It will display systolic pressure, diastolic pressure and pulse after measuring finished.

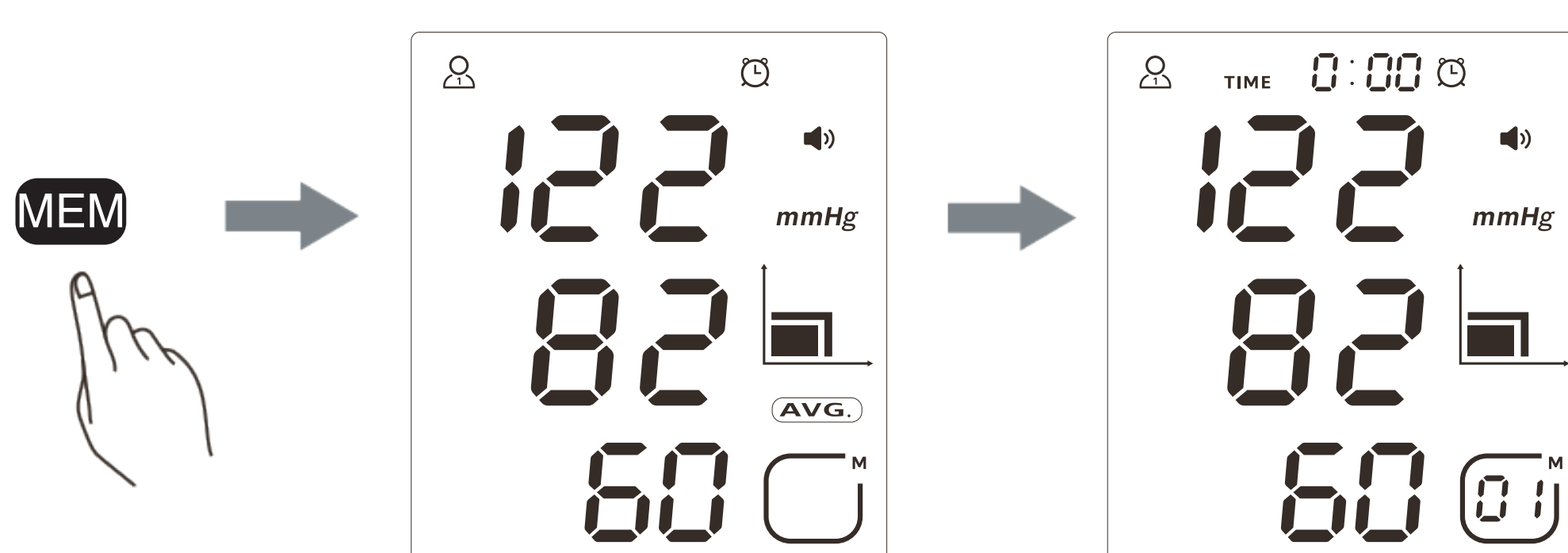


Reference table for blood pressure warning:

Range of blood pressure value	Systolic (mmHg)	Diastolic (mmHg)	Indicator
Optimal	< 120	< 80	
Normal	120-129	80-84	
High-normal	130-139	85-89	
Hypertention	≥ 140	≥ 90	

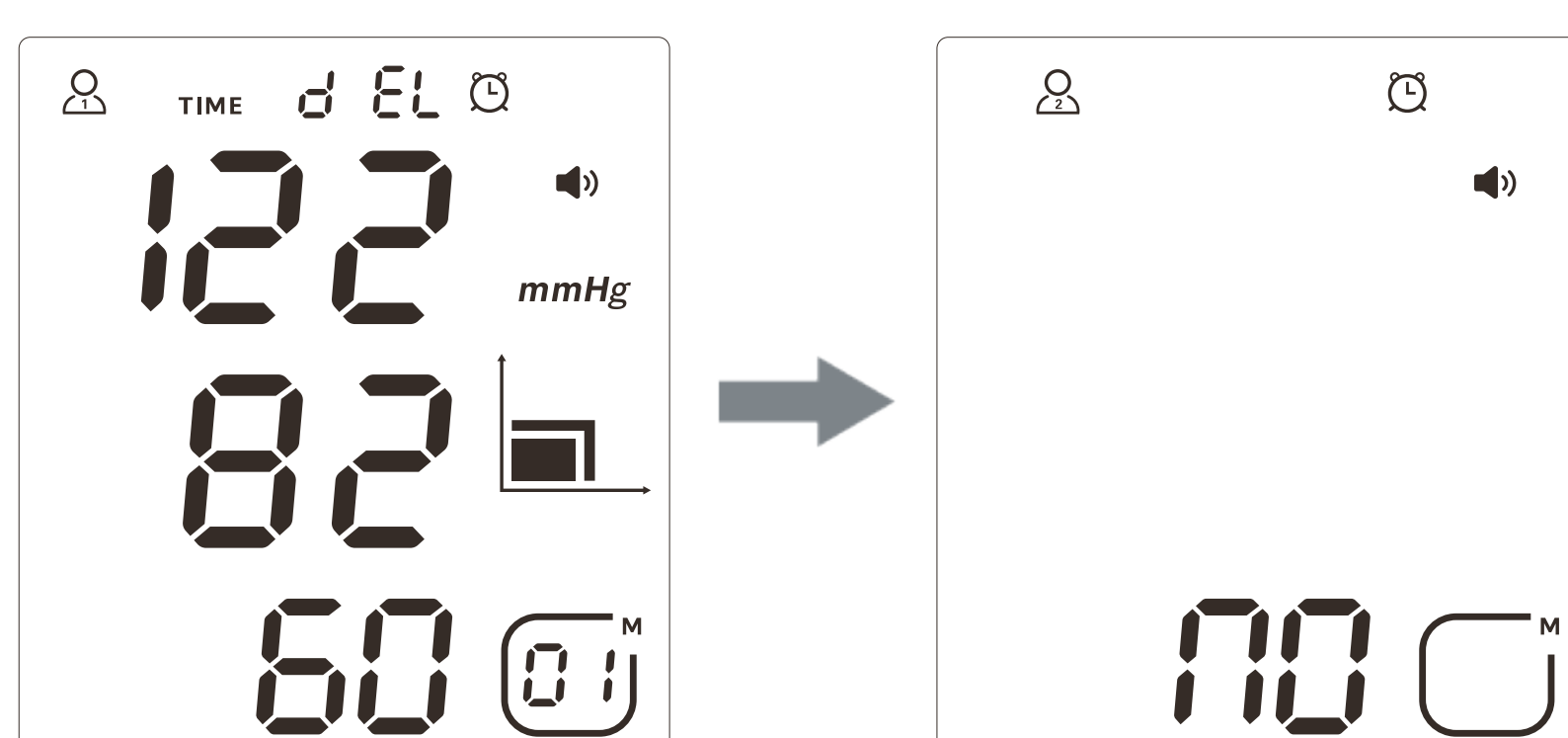
Reading Memory

1. When you press **MEM** button, the first display is the average of the latest 3 measured value.
2. Press **MEM** button again, it will display the record of the previous time.
3. Press **SET** button again, it will display the record of the next time.



Deleting Memory

1. In memory query state, press **SET** button for 3 seconds to enter the single memory deletion interface. In this interface, short press **MEM** button to delete the current user's single group of memories.
2. In memory query state, press **MEM** and **START/STOP** button at the same time for 2 seconds, all records will be deleted.



Attention:

The measuring values in the monitor will not get lost if batteries are taken out.

APP Instructions

Add Device

The user needs to add the device for the first time use.

1. Download and install the "Tuya Smart" app from Google Play store on Android or the App Store on iOS.



Tuya Smart mobile app



2. Turn on the Bluetooth of the mobile phone and the Tuya Smart APP.
3. When the screen is off, press any button on the blood pressure monitor, click + Add Device in the upper right corner of the Tuya Smart App home page, and after searching for the device, follow the page prompts to complete the device addition.

Data Synchronization

Turn on the Bluetooth of the mobile phone and the Tuya Smart App, and when the blood pressure monitor is connected, the data will be automatically synchronized after the measurement is completed.

Historical Data Transfer

1. Turn on the bluetooth of the mobile phone and the "Tuya Smart" app;
2. When the screen is off, press and hold the "MEM" key for 3 seconds, the icon "o" will flash, and enter the transmission state;
3. The icon "F" shows that the data transmission is completed; the icon "E" shows that the data transmission fails.

Note:

·Historical data transmission only uploads current user data, and all historical data can be uploaded by switching users.

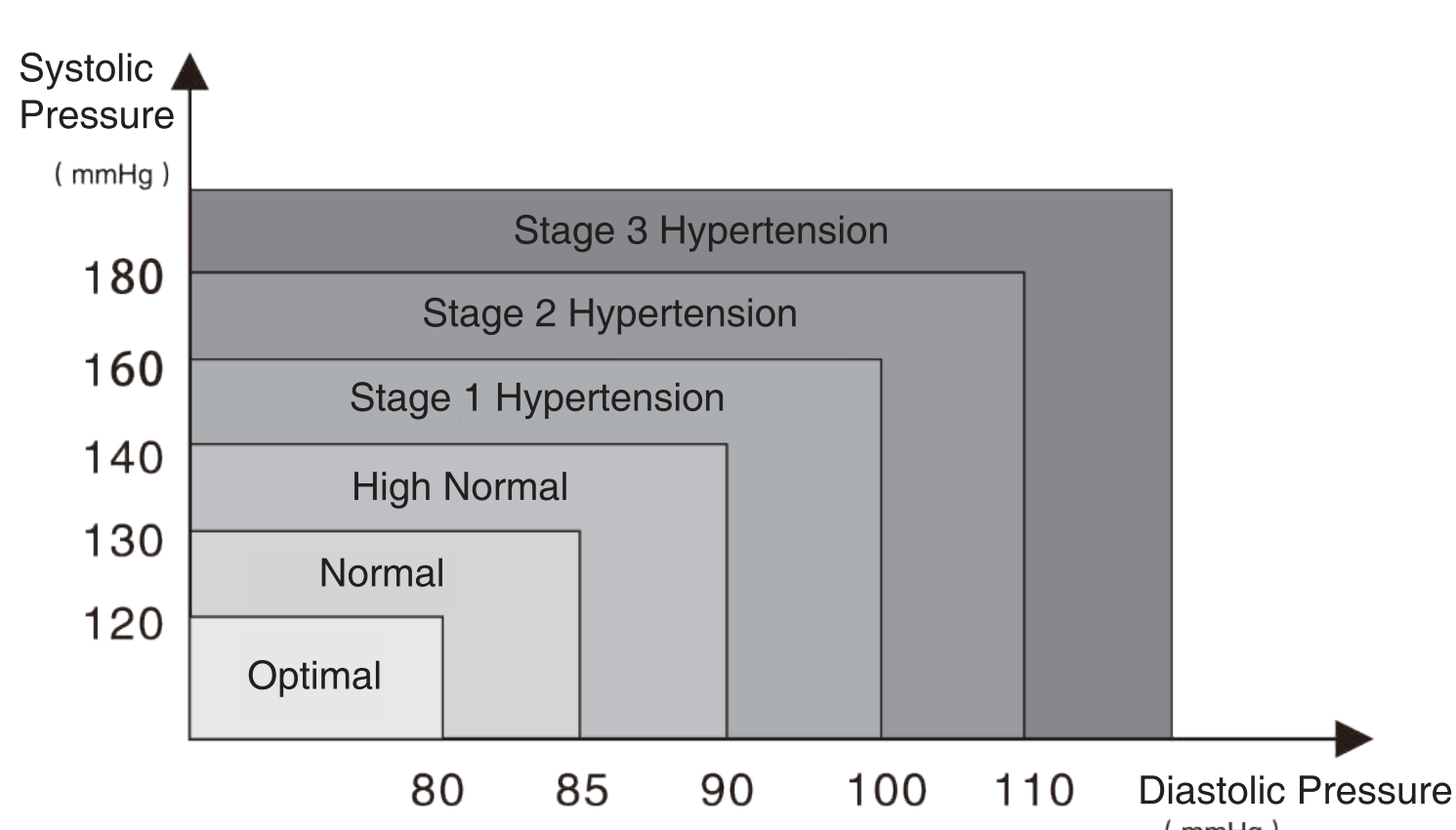
Blood Pressure Knowledge

What is the blood pressure ?

Blood pressure is the pressure exerted by circulating blood upon the walls of blood vessels, which refers to systolic pressure and diastolic pressure. Systolic pressure is the highest pressure output by blood during systole. Diastolic pressure is the lowest pressure that blood flow back to heart during diastole.

Blood pressure classification standard

The World Health Organization (WHO) and International Society of Hypertension (ISH) made a set of standard for blood pressure. It is a general rule for people of different age. It is important to consult your doctors frequently, they will tell you the critical point which need attention.



Change of blood pressure

Blood pressure is not constant, it is influenced by season, time, emotion, sport, alcohol, tobacco, coffee, medicine etc, therefore, the result will be more accurate when you measure blood pressure in a quite environment and physical comfort.

Safety Cautions

1. The product is not allowed to use on infants and young children.
2. Do not inflate before wrapping the cuff.
3. Patients can not judge the results and care themselves, please follow doctor's instruction and ask professional person to explain the measured value.
4. For patients with cardiovascular and cerebrovascular diseases, please use it under the guidance of doctors.
5. Be sure to use an adapter with specifications as shown on page 4.
6. Please be sure to use AC100-240V power source.
7. Please don't use wet hand to pull out the power adapter in case of electric shock.
8. Avoid using mobile phone near the device as it may cause malfunction.
9. Do not use this device in electromagnetic fields. It may result in incorrect measurement results.

Important Information

1. Take the measurement one hour after meal.
2. Do not smoke, drink alcohol, tea or coffee one hour before measurement.
3. Do not measure when you are over fatigue or emotional.
4. keep quiet for 10-20 minutes before measurement.
5. As far as possible, make everyday measurement in the same time, same condition and same position, wait 5 minutes between each measurement.
6. If the device stored in low temperature environment, place it in normal temperature environment for at least one hour before using.
7. Do not use it in moving vehicles (cars, planes), otherwise it can't measure correctly.
8. Please use it in the required temperature and humidity environment, or it may not be able to measure correctly.
9. There may be risk if the air bag is over inflated for a long time.
10. When common arrhythmia (such as atrial premature, premature ventricular, atrial fibrillation) appears, measured values may not be accurate or blood pressure can't be measured.

The accuracy of this monitor has been rigorously tested. It is recommended to check and calibrate once a year to ensure the monitor is functioning properly and accurately. The monitor has a static pressure detection mode for the relevant technical department to perform the test. For more details, please call the customer service hotline for consultation.

Troubleshooting

If there are following abnormal phenomenon, you may refer to the corresponding solutions:

Abnormality	Reason	Checkout
E_{r_p}	Wrong cuff worn or cuff is damaged	Reattach the cuff and remeasure
H_I	Arm cuff has been inflated above 299 mmHg	Do not inflate the arm cuff above 299 mmHg. Remeasure.
E_{r_i}	Pulse may be too weak or cuff deflates too quickly	Reattach the cuff and remeasure.
E_{r_2}	Too much interference	Make sure you are seated and positioned correctly before testing again.
E_{r_3}	The measurement result is not correct.	Remeasure
E_{r_6}	The rubber tube is bent or blocked.	Check the rubber tube and remeasure.
Press the START/STOP button, no display	Batteries low	Connect adaptor to recharge the battery.

If abnormal phenomenon still cannot be solved, please contact the manufacturer or consult the distributor. Please do not disassemble or repair if not knowing the reasons well.








Disinfection, Sterilization, Method

1. Clean the blood pressure monitor frequently;
2. Use a soft dry cloth towel to clean this blood pressure monitor, if it is very filthy you can wet the towel with water or neutral detergent, wring out it and wipe the monitor;
3. Disinfection the cuff with moistened 75% alcohol cotton wool.

Maintenance

1. Please keep the blood pressure cuff and accessories in the saving bag when not using.
2. In order to avoid the damage of the device, do not expose the blood pressure monitor and cuff to high temperature, humidity, full of water vapor or direct sunlight. Avoid strike and fall of the device.
3. To keep the machine clean, please use soft dry cloth to clean it. Do not use diluent, alcohol, petrol and other chemical reagent to clean the device body and cuff.
Note: Please clean the components of arm cuff after one year application.
4. Water and other liquid are kept out of this product.
5. Do not fold the cuff or air pipe tightly.
6. The calibration interval is 1 year. Users can do it in advance if necessary. The device must be tested and calibrated after repair.
7. Do not attempt to open, repair any part, if any problems, contact with distributor of this product.

Specification

Product name	Automatic Digital Blood Pressure Monitor
Model number	HD10
Rechargeable battery	DC3.7V lithium battery
Measuring method	Oscillometric method
Measure range	Pressure: 0 to 299 mmHg (0-37.3kPa) Pulse: 40 to 199 beats/min
Accuracy	Pressure: ± 3 mmHg (± 0.4 kPa) Pulse: $\pm 5\%$ of display reading
Pressure sensor	Semiconductor
Inflation	Automatic
Deflation	Automatic
Memory groups	2 groups, each group has 90 readings
Operating environment	Temperature 5~40 °C Relative humidity $\leq 80\%$ Air pressure 80.0kPa-105.0kPa
Transportation and storing environment	Temperature -20~55 °C Relative humidity 10%~90% Air pressure 80.0kPa-105.0kPa
Device weight	About 225g
Cuff circumference	22-36cm or 22-42cm (optional)
Overall dimension	126 (L) × 97 (W) × 65 (H) mm
Automatic off time	1 minute
Operation method	Continuous operation
Equipment category	Class II, internal electric source
	BF type product
	Read the user manual
	Class II equipment
	Symbol for warning
	Dispose the used product to the recycling collection point according to local regulation
	The product conforms to the requirement of EC Directive MDD(93/42/EEC)
	Device used within the Magnetic Resonance (MR) environment is prohibited.
Disinfection, sterilization method	According to the method provided by manufacturer
Safety sort	Cannot be used in the condition of flammable anesthesia gas mixed with air or with oxygen or nitric oxide
Electromagnetic compatibility	Group 1, class B equipment
Ingress protection grade	IP22 Prevent solid objects into greater than 12 mm, 15 degrees tilt when still can prevent water intrusion


EMC Declaration

Guidance and manufacturer's declaration - electromagnetic immunity

The “blood pressure monitor” is intended for use in the electromagnetic environment specified below. The customer or the user of the “blood pressure monitor” should ensure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment — guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±8kV contact ±15kV air	±8kV contact ±15kV air	Floor should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV for power supply lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1kV differential mode ±2kV common mode	±1kV differential mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	<5%UT (>95% dip in UT) for 0.5 cycle 40%UT (60% dip in UT) for 5 cycles 70%UT (30% dip in UT) for 25 cycles <5%UT (>95% dip in UT) for 5 sec	<5%UT (>95% dip in UT) for 0.5 cycle 40%UT (60% dip in UT) for 5 cycles 70%UT (30% dip in UT) for 25 cycles <5%UT (>95% dip in UT) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the “blood pressure monitor” requires continued operation during power mains interruptions, it is recommended that the “blood pressure monitor” be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30A/m	30A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: UT is the a.c. mains voltage prior to application of the test level.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment — guidance
Conducted RF IEC 61000-4-6	10 Vrms 150 kHz to 80 MHz	10V	<p>Portable and mobile RF communications equipment should be used no closer to any part of the “blood pressure monitor”, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance</p> $d = 1.2 \sqrt{P}$ $d = 1.2 \sqrt{P} \quad 80\text{MHz to } 800\text{MHz}$ $d = 2.3 \sqrt{P} \quad 800\text{MHz to } 2.5\text{GHz}$ <p>where \sqrt{P} is the maximum output power rating of the transmitter in watts (W). according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.5 Ghz	10V/m	

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the “blood pressure monitor” is used exceeds the applicable RF compliance level above, the blood pressure monitor should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the “blood pressure monitor”.

b Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.

Guidance and manufacturer's declaration - electromagnetic emissions

The “blood pressure monitor” is intended for use in the electromagnetic environment specified below. The customer or the user of the “blood pressure monitor” should ensure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment — guidance
RF emissions CISPR 11	Group 1	The “blood pressure monitor” uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The “blood pressure monitor” is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

Recommended separation distances between portable and mobile RF communications equipment and the blood pressure monitor

The “blood pressure monitor” is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the blood pressure monitor can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the “blood pressure monitor” as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter (m)		
	150kHz to 80MHz $d = [\frac{3.5}{V_1}] \sqrt{P}$	80MHz to 800MHz $d = [\frac{3.5}{E_1}] \sqrt{P}$	800MHz to 2.5GHz $d = [\frac{7}{E_1}] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations.

Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Guidance and manufacturer's declaration - electromagnetic immunity

Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment.

Test frequency (MHz)	Band ^{a)} (MHz)	Service ^{a)}	Modulation ^{b)}	Maximum power (W)	Distance (m)	IMMUNITY TEST LEVEL (V/m)
385	380 - 390	TETRA 400	Pulse modulation ^{b)} 18HZ	1.8	0.3	27
450	430 - 470	GMRS 460, FRS 460	FM ^{c)} ± 5 kHz deviation 1 kHz sine	2	0.3	28
710	704 - 787	LTE Band 13, 17	Pulse modulation ^{b)} 217 HZ	0.2	0.3	9
745						
780						
810	800 - 960	GSM 800/900, TETRA 800, IDEN 820, CDMA 850, LTE Band 5	Pulse modulation ^{b)} 18HZ	2	0.3	28
870						
930						
1 720	1 700 - 1 990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1,3, 4,25;UMTS	Pulse modulation ^{b)} 217 HZ	2	0.3	28
1 845						
1 970						
2 450	2 400 - 2 570	Bluetooth, WLAN, 802,11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation ^{b)} 217 HZ	2	0.3	28
5 240	5 100 - 5 800	WLAN 802,11 a/n	Pulse modulation ^{b)} 217 HZ	0.2	0.3	9
5 500						
5 785						

NOTE If necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the ME EQUIPMENT or ME SYSTEM may be reduced to 1 m. The 1 m test distance is permitted by IEC 61000-4-3.

^{a)} For some services, only the uplink frequencies are included.

^{b)} The carrier shall be modulated using a 50% duty cycle square wave signal.

^{c)} As an alternative to FM modulation, 50% pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

After-sales Service and Warranty Card

1. Implement the national policy of Three Guarantees.
2. Free maintenance will be provided by AVICHE in case of quality problems within one year from the date of purchase. In case of such issues over one year, Users can seek services by right of invoice and warranty card to the after-sales service departments, branch offices and distributors of AVICHE, where the spare parts for maintenance will be provided with reasonable charges. If users can not provide invoice, the warranty period will be identified by extension of 13 months from the date of production.
3. The followings are not covered by the warranty:
 - 3.1 The Vulnerable Consumables.
 - 3.2 The liquid leaked by the users enters into the device to cause abnormal operation.
 - 3.3 Trouble caused by unauthorized demolition, repair or transformation of device.
 - 3.4 Trouble caused by accidentally falling down in use or handling.
 - 3.5 Trouble caused by the failure to operate in accordance with the correct operations in user manual.
 - 3.6 The damage caused by unpredictable natural disasters (such as fire, earthquakes, floods, etc.).

Automatic Digital Blood Pressure Monitor Warranty Card

HD10	Warranty Period	From	M/	D/	Y	to	M/	D/	Y
Name		Sales Unit	Name						
Address			Address						
Phone			Phone						
<p>1. Warranty</p> <p>a) Since the date of purchase, the warranty period will last for 1 year, and free maintenance will be provided (except for force majeure and human factors).</p> <p>b) The affiliated gifts will not be covered within the warranty.</p> <p>c) Proof: Purchase records, shopping certificate, and invoice.</p> <p>2. Spare Parts</p> <p>Spare parts will be provided free of charge within the warranty period, and is subject to charges out of warranty period.</p> <p>3. Contact Information for After-sales Service. Service Hotline: +86-400-800-9850</p>									

AVICHE Shandong Medical Technology Co., Ltd.

Product Inspection Certificate

Product Name: Automatic Digital Blood Pressure Monitor

Model No.: HD10

Inspection Date: _____

Quality Controller: _____

AVICHE Shandong Medical Technology Co., Ltd.

AVICHE

Production date: Check the label on the bottom of monitor

Service life: 5 years

Distributed by: AVICHE Shandong Medical Technology Co., Ltd.

Manufacturer: AVICHE Shandong Medical Technology Co., Ltd.

Address: Building D1-1, Yinfeng Biological Park, No.1177 Chunlan Road, Jinan.

Service Hotline: +86-400-800-9850

Website: www.aviche.cn

Email: info@aviche.com