Fully Automatic Upper Arm Style

Blood Pressure Monitor

Instruction Manual

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Introduction

▲ Your new digital blood pressure monitor uses the oscillometric method of blood pressure measurement. This means the monitor detects your blood's movement through your brachial artery and converts the movements into a digital reading. An oscillometric monitor does not need a stethoscope, so the monitor is simple to use.

▲ This automatic blood pressure monitor could measure the systolic pressure, diastolic pressure and pulse, the components are included the body, cuff and printed instruction manual. Batteries and adapter are optional. This unit is intended for the adult using.

▲ Intelligent inflation will reduce the uncomfortable feeling by incorrect inflation, and shorten the measurement time, prolong the cuff's usage lifetime.

▲ 2x90 sets memory function, each measurement result will be displayed on the screen, and automatically stored .This unit has blood classification index, could easy to check your blood pressure.

Please read the manual carefully before you use the unit, and keep the manual well after using.

Safety Information

■ To assure the correct use of the product, basic safety measures should always be followed including the warning and the caution listed in the instruction manual :

Symbol descriptions

The following symbols may appear in this manual, on the label, on the device, or on it's accessories. Some of the symbols represent standards and compliances associated with the device and its use.

⚠ WARNING: This alert identifies hazards that may cause serious personal injury or death.

⚠ CAUTION: This alert identifies hazards that may cause minor personal injury, product damage, or property damage.

Type B applied part

Manufacturer SN Specifies serial number

EC REP Authorized Representative in the European Community

CE 0123 CE Mark: conforms to essential requirements of the Medical Device Directive 93/42/EEC.

DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

Direct current Operating instructions

Follow instructions for use

⚠ CAUTION: Consult accompanying documents

Safety Information

⚠ Those who have arrhythmia, diabetes, blood circulation or apoplexy problem, please use under the physician' s instruction.

⚠ Contact your physician for specific information about your blood pressure. Self diagnosis and treatment which use measured results may be dangerous. Follow the instructions of your physician or licensed healthcare provider.

⚠ Please place on a high place where children can' t be touched.

⚠ No modification of this equipment is allowed.

⚠ Do not modify this equipment without authorization of the manufacturer.

⚠ If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of equipment.

⚠ The cuff hose around neck may cause the suffocation.

⚠ The swallowing of small part like packaging bag, battery, battery cover and so on may cause the suffocation.

⚠ Please don't use a dilution agent, alcohol or petrol to clean the unit. Please don't hit heavily or fall down the product from a high place. Use the right cuff, otherwise it can not work.

⚠ Never leave any low battery in the battery compartment since they may leak and cause damage to the unit.

⚠ Please take off the battery if you won't use in 3 months.

⚠ Replace the new batteries if the unit display a low battery symbol.

Safety Information

⚠ Do not mix the old and new batteries.

⚠ Do not use a cellular phone near the unit. It may result in operational failure.

⚠ Please avoid using in high radiant area in order to make your measuring data correctly.

⚠ Do not use the equipment where flammable gas (such as anesthetic gas, oxygen or hydrogen) or flammable liquid (such as alcohol) are present.

⚠ WARNING:

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact you local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being.

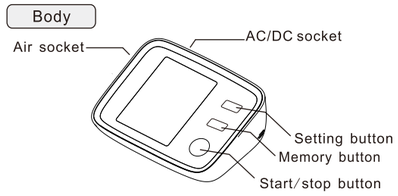
Classification

1. Internally powered equipment;
2. Type B applied part;
3. Protection against ingress of water: IPX0;
4. Not category AP / APG equipment;
5. Mode of operation: Continuous operation;

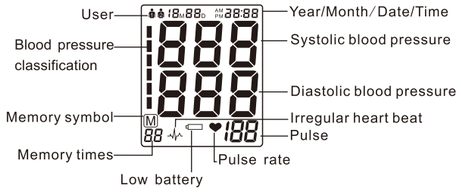
⚠ The user must check that the equipment functions safely and see that it is in proper working condition before being used.

Product structure

Body



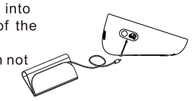
Display



Cuff size and connection

The accessories cuff is M size, for upper-arm circumference 22-32cm use. The cuff is treated as the applied part.

Insert the connector with cuff tube into the hole which is on the left side of the device as picture.
(Only provided cuff can be used, can not change to any other branded cuff.)



Battery installation

Battery installation

Remove the battery cover from the battery compartment, insert the battery.

a) Remove the battery cover as picture showed.

b) Insert 4 AA powerful batteries into the compartment and ensure each battery is in the proper direction.

Low battery and replacement

When power on, the low battery symbol will display once the unit start to work, and you must replace with new batteries, otherwise the unit can' t work.

Battery type and replacement

Please use 4pcs AA identical 1. 5V alkaline batteries.
Do not use the batteries beyond their expiry date.
Please remove the batteries if you do not need to use for long time.

⚠ WARNING:

Dispose of the battery in accordance with all federal, state and local laws. To avoid fire and explosion hazard, do not burn or incinerate the battery.

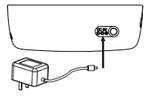
Battery installation

Adapter usage (option)

1. When optional AC adapter should comply with the requirement of IEC 60601-1:2005. Furthermore all configurations shall comply with the requirements for medical electrical systems (see IEC 60601-1-1 or clause 16 of the 3Ed. of IEC 60601-1, respectively). Anybody connecting additional equipment to medical electrical equipment configures a medical system and is therefore responsible that the system complies with the requirements for medical electrical systems. Attention is drawn to the fact that local laws take priority over the above mentioned requirements. If in doubt, consult your local representative or the technical service department.
2. When using AC power, to avoid possible damage to the monitor, use only the exclusive AC adapter that can be purchased from authorized dealers. Other adapters may vary in output voltage and polarities.
3. Insert the adapter plug into the hole on the backside of the unit as picture.
4. Insert the other side of the adapter into the outlet with 100-240V.
5. To remove the AC adapter, disconnect the adapter plug from the outlet first and then disconnect the cord from the unit's socket.

Adapter technical features:

Output voltage: 6V ± 5%
Max. output current: At least 600 mA
Output plug polarity: <+> inner
External diameter: 5.5mm 0.1mm
Internal diameter: 2.1mm 0.1mm



Setting mode

Note:

・When use AC adapter, the power of battery won't be consumed.

・When suddenly stop during measurement (like the plug off from the outlet by carelessness), it must be reinserted the plug into the unit, and restart the measurement.

How to set

1. User setting:

Press button SET when power off , the screen will display or , press button MEM ,it will be changed between and , press button SET when you confirm the user, then it will enter into the year setting mode.

2. Year setting:

Continue to above step, the screen will display and flash 20XX, the last digit of the year will increase 1 when press button MEM each time, you could choose from 2001 to 2099. Press button SET when you confirm the year, then it will enter into the month and date setting mode.

Year setting

Setting mode

3. Month and date setting

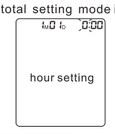
Continue to above step, the screen will display xxMxxD and xxxx, and keep flashing on month , the digit will increase 1 when press button MEM each time, you could choose from 1 to 12. Press button SET when you confirm the month, then it will set the date. Same as the month setting , each time you press button MEM , the digit will keep changing from 01 to 31. Press button SET when you confirm the date, then it will enter into the time setting mode.

Month setting

Date setting

4. Time setting:

Continue to above step, the screen will display xxMxxD and xx:xx, and keep flashing on the digits of hour, the digit will increase 1 when press button MEM each time, you could choose from 0 to 23. Press button SET when you confirm the hour, then the digits of minute start to flash , same as the hour setting , each time you press button MEM the digits will keep changing from 00 to 59. Press button SET when you confirm the minute, then the total setting mode is completed.



hour setting

minute setting

Measurement

Pre-measurement

Proper use of the unit

- Please keep quiet for 5-10 minutes, and avoid eating, drinking alcohol, smoking, exercising and bathing before taking measurement. All these factors will influence the measurement result.
- Remove any garment that fits closely to your upper arm.
- Always measure on the same arm(normally left).
- Take measurement regularly at the same time of every day,as blood pressure changes even during the day.

Common factors of wrong measurement

- All efforts by the patient to support their arm can increase blood pressure.
- Make sure you are in a comfortable,relax position and do not activate any of the muscles in the measurement arm during measurement.Use a cushion for support if necessary.
- If the arm artery lies lower or higher than the heart,a false reading will be obtained.

Note:

- Only use clinically approved cuffs!
- A loose cuff or a exposed bladder causes false reading.
- With repeated measurements ,blood accumulates in the arm which can lead to false reading.
  Consecutive blood pressure measurements should be repeated after 1 minute pause or after the arm has been held up in order to allow the accumulated blood to flow away.

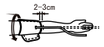
Proper use of the unit

Fitting the cuff

1). Put the cuff on a table flatly with the velcro side down. Pass the end of the cuff through the metal loop so that a circle is formed. The velcro closer will now be facing outwards (ignore this step if the cuff has already been prepared).

2). Push the cuff over the left upper arm so that the tube points in the direction of the lower arm.

3). Wrap the cuff on the arm as illustrated. Make certain that the lower edge of the cuff lies approximately 2 to 3 cm above the elbow and the rubber tube leaves the cuff on the inner side of the arm.



4). Tighten the free end of the cuff and close the cuff by affixing the velcro.

5). The cuff should be snug on your upper arm so That you can fit 2 fingers between the cuff and your upper arm. Any piece of clothing restricts the arm which must be taken off.

6). Secure the cuff with the velcro closer in such a way that it lies comfortably and not too tight. Lay your arm on a table (palm upwards) so that the cuff is at the same height as the heart. Do not bend the tube.

Note:

If it is not possible to fit the cuff to your left arm, it can also be placed on the right. However, all measurements should be made using the same arm.

Proper use of the unit

Measuring procedure:

After the cuff has been appropriately positioned,the measurement can begin:

1). Press the START/STOP button, all symbols appear on the display , then the pump begins to inflate the cuff, the rising pressure in the cuff is shown on the display.

2). After the suitable pressure has been reached, the pump stops and the pressure gradually falls. The cuff pressure is displayed. In case that the inflation is not sufficient, the device automatically re-inflates to a higher pressure.

3). When the device detects the signal, the heart symbol ❤ on the display starts to flash.

4). in the meantime, the systolic, diastolic and pulse rate will appear on the display.

5). The measurement readings remain on the display until you switch off the device. If no button is pressed for a period of 3 minutes, the device switches off itself in order to save the power.

Note:The symbol will be displayed along with the reading if the irregular heartbeat is detected during the measurement.

Discontinuing a measurement

If it is necessary to interrupt a blood pressure measurement for any reason (eg. the patient feels unwell) the START/STOP button can be pressed at any time. The device immediately decrease the cuff pressure automatically.

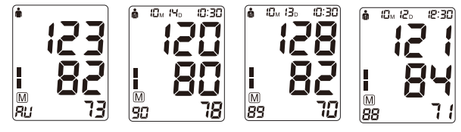
Memory-recall of measurements

This blood pressure monitor automatically stores 2x90 sets measurements value, the oldest record will be replaced by the latest measurement value when more than 90 sets each user.

Read memory record

Press the button MEM when power off, the latest 3 times average value will be shown, press the button MEM again,the last measurement value will be shown, as well as subsequent measurements can be display one after the other by pressing the button MEM each time.

About blood pressure

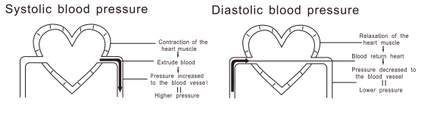


Memory -clear of measurements

If you are sure that you want to permanently remove all stored memories. Press the button SET for 6 times until CL appears when power off, press the START/STOP button ,CL will flash for 3 times to clear all the memories. After this press button MEM, M and "no" will be shown on the display which mean that no memory in store.

About blood pressure

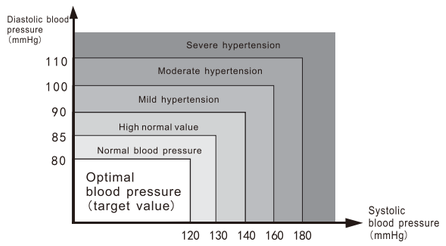
Blood pressure is the pressure exerted the arteries.
The systolic blood pressure value represents the blood pressure produced by contraction of the heart muscle.
The diastolic blood pressure value represents the blood pressure produced by relaxation of the heart muscle.



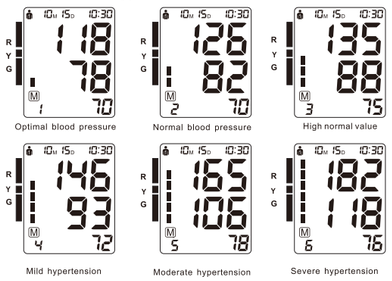
About blood pressure

■According to the blood pressure classification by the WHO/ISH.

■SYS lower than 100mmHg(13.3kPa) is considered as hypotension.



■ Blood pressure type



Specification

Description	Automatic upper arm blood pressure monitor	
Display	LCD digital display	
Measuring principle	Oscillometric method	
Measuring localization	Upper arm	
Measurement range	Pressure	0~299 mmHg (0~39.9kPa)
	Pulse	40~199 pulses/min
Accuracy	Pressure	±3mmHg (±0. 4kPa)
	Pulse	±5% of reading
LCD indication	Pressure	3 digits display of mmHg
	Pulse	3 digits display
	Symbol	Memory/Heartbeat/Low battery
Memory function	2x90 sets memory of measurement values	
Power source	4pcs AA alkaline battery DC. 6V or AC adapter	
Automatic power off	In 3 minutes	
Main unit weight	Approx. 219g(batteries not included)	
Main unit size	L132mm x W100mm x H45mm	
Main unit lifetime	10,000 times under normal use	
Battery life	Could be used for 300 times for normal condition	
Accessories	Cuff, instruction manual	
Operating environment	Temperature	5~40℃
	Humidity	15%~85%RH
	Air pressure	86kPa~106kPa
Storage environment	Temperature -20℃~55℃, Humidity :10% ~85% avoid crash, sun burn or rain during transportation.	

EMC Declaration

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHZ	3 V	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 d=1.2 √P d=1.2 √P 80MHz to 800MHz d=2.3 √P 800MHz to 2.5 Ghz where 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). 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] Interference may occur in the vicinity of equipment marked with the following symbol:
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 Ghz	3 V/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 [V1] V/m.

Fully Automatic Upper Arm Style

Blood Pressure Monitor

CE

Rev.01

Exceptional Situation

Error indicators

■The following symbol will appear on the display when measuring abnormal.

Symbol	Cause	Correction
E-1	Weak signal or pressure change suddenly	Wrap the cuff properly.
		Remeasure with correct way.
E-2	External strong disturbance	When near cell phone or other high radiant device , the measurement will be failed.
		Keep quite and no chatting when measure.
E-3	It appears error during the process of inflating	Wrap the cuff properly.
		Make sure that the air plug is properly inserted in the unit.
		Remeasure.
E-5	Abnormal blood pressure	Repeat the measurement after relax for 30 mins , if get unusual readings for 3 times,please contact your doctor.
	Low battery	Replace all the worn batteries with new ones.

Trouble removal

Problem	Check	Cause and solutions
No power	Check the battery power	Replace new one
	Check the polarity position	Installation for proper placement of the batteries polarities
No inflation	Whether the plug insert	Insert into the air socket tightly
	Whether the plug broken or leak	Change a new cuff
Err and stop working	Whether move the arm when inflate	Keep the body peaceful
	Check if chatting when measured	Keep quite when measure
Cuff leak	Whether the cuff wrap too loose	Wrap the cuff tightly
	Whether the cuff broken	Change a new cuff

⚠ Please contact the distributor if you can't solve the problem, do not disassemble the unit by yourself!

Warranty information

Statement

- The intended use: the unit is intended to be used by adults at home or medical center to measure blood pressure and pulse rate from the upper arm.
- The unit satisfies the requirements of EN 1060-1:1995+A2:2009 Non-invasive sphygmomanometers, EN 1060-3:1997+A2:2009 Non-invasive sphygmomanometers.
- Blood pressure measurements determined with this device are equivalent to those obtained by a trained observer using the cuff/stethoscope auscultatory method, within the limits prescribed by the American National Standard, manual, electronic, or automated sphygmomanometers.
- The risk of patient and user can be lowered to acceptable level.

Warranty Information

- The unit is guaranteed to be free of defects in workmanship and materials under normal use for a period of Two Years from the date listed on the purchase record.
- For repair under this warranty. Our authorized service agent must be advised of the fault with the period of the warranty. This warranty covers parts and labor only under normal operations. Any defect resulting from natural causes, eg. flood, hurricane etc, is not within this guarantee. This guaranty does not cover damage incurred By use of the unit not in accordance with the instructions, accidental damage, or being tampered with or serviced by unauthorized service agents.
- Monitor subjected to misuse, abuse, and neglect of these manual content , non-instructional purposes; unauthorized repair or modifications will be excluded from this warranty.

⚠ The device requires no calibration.

⚠ The device is not repairable and contains no user serviceable parts.

EMC Declaration

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.

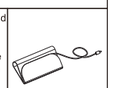
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The "blood pressure monitor" uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions 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	

Care and maintenance

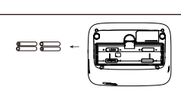
Care for the main unit and blood pressure monitor cuff

● Keep the unit in the storage case when no use.
● Clean the unit with soft dry cloth. Do not use any abrasive or volatile cleaners.
● Never immerse the unit or any component in water.

● Make sure the monitor is off prior to cleaning, a mixture of distilled water and 10 percent bleach could be used.
● Using a spray bottle, moisten a soft cloth towel with the bleach or detergent mix until it is fully saturated. Squeeze any excess moisture from the cloth to avoid any dripping or potential oversaturation of the cuff.
● Wipe all surfaces of the blood pressure monitor cuff thoroughly, making sure to clean the inside and outside of the cuff. Be cautious not to get any moisture in the main unit.
● Using a dry cloth, gently wipe away any excess moisture that may remain on the blood pressure cuff. Lay the cuff flat in an unrolled position and allow the cuff to air dry.



Maintenace

● Do not clean the body and cuff with naphtha, thinner or gasoline etc.	● Do not wet the cuff or attempt to clean the cuff with water.
	
● Store the unit in a clean and dry location . Do not subject the unit to extreme hot or cold temperature, humidity and direct sunlight.	● Remove the batteries if the unit will not be used in 3 months or longer.
	

※We won't be responsible for any quality problem if you don't care and maintain the product as instructed.

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	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the elative humidity should be at least 30 %.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	±2 kV for power supply lines ±1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common 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	3 A/m	3 A/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.

EMC Declaration

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	eparation distance according to frequency of transmitter m		
	150 kHz to 80 MHZ	80 MHz to 800 MHZ	800 MHz to 2,5 Ghz
	$d = [\frac{3,5}{V_1}]\sqrt{P}$	$d = [\frac{3,5}{E_1}]\sqrt{P}$	$d = [\frac{7}{E_1}]\sqrt{P}$
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.