

**CITIZEN**

Micro HumanTech

# Instruction Manual

Digital Blood Pressure Monitor

Wrist Measuring  
Automatic Model

# CH-618

English





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## **MEDICAL DISCLAIMER**

This manual and product are not meant to be a substitute for advice provided by your doctor or other medical professional.

You are not to use the information contained herein, or this product for diagnosing or treating a health problem or prescribing any medication. If you have or suspect that you have a medical problem, promptly consult your healthcare provider.

## **Blood Pressure Monitor Intended Use:**

Measures human's Systolic blood pressure, Diastolic blood pressure and heart rate on wrist by oscillometric measurement method.

The product is recommended for use by people over the age of 18 and is for home use and not clinical use.

## **1. What is blood pressure ?**

Blood pressure is a measurement of the force of blood flowing against the walls of the arteries. Arterial blood pressure is constantly changing during the course of the cardiac cycle. The highest pressure in the cycle is called the systolic blood pressure, the lowest is the diastolic blood pressure. Both pressure readings, the systolic and the diastolic are necessary to enable a physician to evaluate the status of a patient's blood pressure. Many factors such as physical activity, anxiety or the time of day, can influence your blood pressure. Blood pressure is typically low in the morning and increases from the afternoon to the evening. It is lower in the summer and higher in the winter.

## **2. Why is it useful to measure blood pressure at home ?**

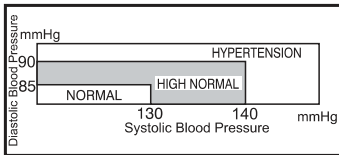
Having one's blood pressure measured by a doctor in a hospital or a clinic, and a group health checks, tend to stimulate nervousness in the subject and may even create high blood pressure. Also varies blood pressure in accordance with a variety of conditions and so judgment is not possible on the basis of a single measurement.

The blood pressure measured first thing in the morning after getting up, before taking any food and with the subject still, is known as the fundamental blood pressure. In practice it is rather difficult to record the fundamental blood pressure, but to come

as near as possible to measuring the blood pressure in an environment that is close to this, is why it is useful to take the measurement at home.

## A. WHO blood pressure classifications

Standards for assessment of high or low blood pressure without regard to age, have been established by the World Health Organization (WHO), as shown in the chart.



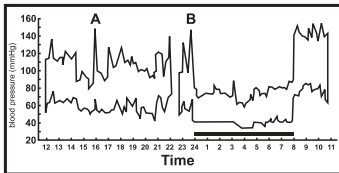
\* Figure No.1

## B. Variations in blood pressure

Individual blood pressures vary greatly both on a daily and a seasonal basis. These variations are even more pronounced in hyper tense patients. Normally the blood pressure rises while at work and is at its lowest during sleeping period.

**(Hyper tense: means a person who has high blood pressure symptom.)**

The graph below illustrated the variations in blood pressure over a whole day with measurement taken every five minutes.



\* Figure No.2

The thick line represents sleep. The rise in blood pressure at 4 PM (A in the graph) and 12 PM (B in the graph) correspond to an attack of pain.

### **3. Important information before use of the unit**

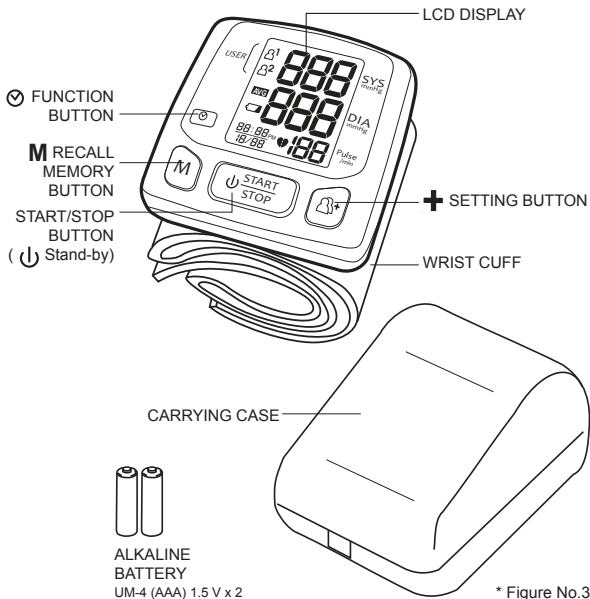
- ⊙ Please rest for at least 5~10 minutes before taking the measurement.
- ⊙ To allow your blood vessels to return to the condition prior to taking the measurement, please wait at least 3~5 minutes between measurements. You may need to adjust the wait time according to your personal physiological situation.
- ⊙ If you have one of the circulatory problems as arteriosclerosis, diabetes, liver disease, kidney disease, severe hypertension, peripheral circulation....., please consult your doctor or healthcare professional before using the devices.
- ⊙ Wait 30 ~ 45 minutes before measurement if you've just consumed caffeinated beverages or smoked cigarettes.
- ⊙ Blood pressure measurements should be interpreted by a physician or trained health professional who is familiar with your medical history. By using the unit regularly and recording the results for your physician to interpret, you keep your physician informed of the continuing trends in your blood pressure.
- ⊙ Wind the cuff snugly around your wrist and the cuff must be at the same level as your heart.
- ⊙ Do not vibrate the unit during measurement, or the proper measurement will not be achieved.



- ⊙ Perform measurement quietly in a relaxed position.
- ⊙ Do not wind the cuff over jacket or sweater sleeve, or measurement cannot be done.
- ⊙ Keep in mind, that blood pressure naturally varies from time to time throughout the day and also is affected by lots of different factors such as smoking, alcohol consumption, medication and physical activity.
- ⊙ People with a condition that causes circulatory problems (diabetes, kidney disease, arteriosclerosis or poor peripheral circulation) may get lower readings with this monitor than with a blood pressure monitor that is used on the upper arm. Please consult your physician to determine if your wrist blood pressure accurately reflects your actual blood pressure.
- ⊙ Blood pressure measurement determined with the unit are equivalent to those obtained by a trained observer using the cuff / stethoscope auscultation method. Within the limits prescribed by the Standard of EN 1060-4.
- ⊙ This product is not suitable for pregnant women.

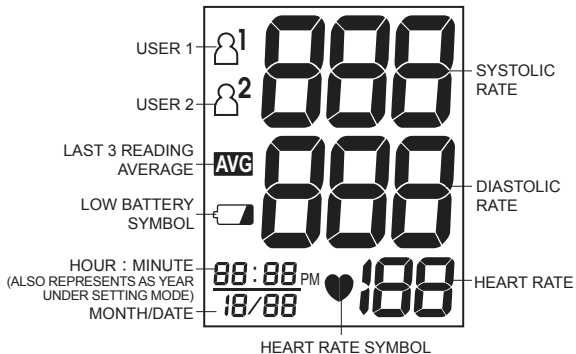
## 4. Device description:

### A. Name of the parts



\* Figure No.3

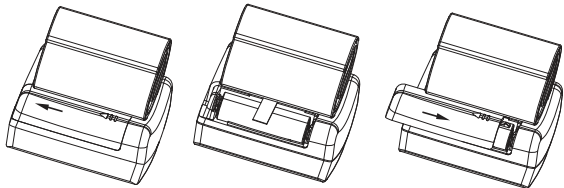
## B. Description of display symbols



## 5. Changing batteries

Remove the battery cover at the left side of the unit and insert batteries into the battery compartment in accordance with ribbon strip as shown, taking extreme care that the polarities + and - are observed.

Important notice: to take the batteries out easily, just pull the ribbon strip for help.

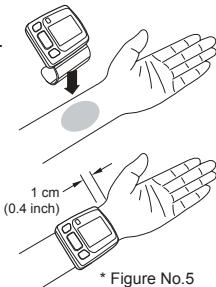


\* Figure No.4

## 6. Attaching pressure cuff

A. Wrap the pressure cuff around the wrist.

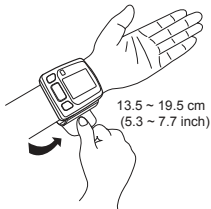
- The display of the unit should be placed on the palm side of the wrist.
- The wrist should be bare.



\* Figure No.5

B. Fasten the pressure cuff snugly.

- a. Do not pull strongly on the pressure cuff.
- b. Do not make the pressure cuff too tight.



\* Figure No.5-1

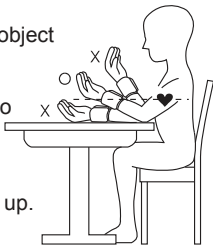
## 7. Correct measurement position

It is extremely important for the measured values, that the cuff is at the same height of the heart.

Higher or deeper position will give deviations from the true value.






### Measurement while sitting down:

- a. Place your elbow on a table or other object (such as our carry case).
- b. Use the armrest to position the arm so that the pressure cuff is at the same height as the heart.
- c. Relax your hand with the palm facing up.



\* Figure No.6

## 8. Symbol Definitions

SYMBOLS	Definitions
 <b>Low Battery Symbol</b>	<p>This symbol appears when the battery power is excessively low or the polarity reverses.</p> <p>→ We suggest you replace all batteries with new ones, and make sure the +/- polarities are properly positioned.</p>
 <b>Heart Rate Symbol</b>	<p>Once pulse is detected, the symbol flashes with each pulse beat.</p> <p>→ Our suggestion: Please do not talk or move during measurements.</p>
 <b>Last 3 Reading Average</b>	<p>This symbol appears when LCD displays average value of last 3 readings.</p>
 <b>User 1</b>	<p>Appears when the monitor is operated by User 1.</p>
 <b>User 2</b>	<p>Appears when the monitor is operated by User 2.</p>












<b>SYMBOLS/ SYMPTOMS</b>	<b>CONDITIONS/ CAUSES</b>	<b>INDICATION/ CORRECTION</b>
<b>EE</b> <b>Measuring Error Symbol shown on display or the blood pressure value is displayed excessively low or high.</b>	Cuff has been placed incorrectly.	Wrap the cuff properly so that it is positioned correctly.
	Did you talk or move during measurement?	Measure again. Keep wrist steady during measurement.
	Shaking of the wrist with the cuff on.	
<b>E1</b> <b>Measuring Error Symbol</b>	Air circuit abnormality.	Measure again.
<b>E2</b> <b>Measuring Error Symbol</b>	Inflation pressure exceeding 300 mmHg.	Switch the unit off, then measure again.
<b>E3</b> <b>Measuring Error Symbol</b>	Error determining measurement data.	Measure again.
Note: If "EP" appears on the display, just return the device to your local distributor or importer.		

## 9. How to measure

### A. Inserting batteries in position:

- Open battery cover.
- Refer to the picture in positioning batteries. (Figure No.4)
- All LCD segments appear on the display in 3 seconds.






### B. Setting Date and Time:

- Press "  " button over 2 secs ("year" starts flashing)  
Press "  " button to set the correct year (2011,2012,...2026)
- Press "  " button ("month" starts flashing)  
Press "  " button to set the correct month (1,2,3,.....12)
- Press "  " button again ("date" starts flashing)  
Press "  " button to set the correct date
- Press "  " button again ("hour" starts flashing)  
Press "  " button to set the correct hour in 12-hour format
- Press "  " button again ("minute" starts flashing)  
Press "  " button to set the correct minute (0,1,2,3,.....59)
- Press "  " button again to switch to normal time  
(month, date, hour and minute appear on the display)


### C. Steps to take blood pressure measurement:

- Wrap the cuff around the wrist (Refer to Wrapping of Wrist cuff as Figure No. 5)
- Sit upright on the chair to have correct posture. (Refer to Correct Posture in Taking Blood Pressure as (Figure No. 6)



- c. Press "   $\frac{\text{START}}{\text{STOP}}$  " button. Press "  + " button to select USER (   $\leftrightarrow$   ). Press "   $\frac{\text{START}}{\text{STOP}}$  " button again. All elements display '888' in 3 seconds. Afterward, displays the updated time. The measuring blood pressure symbol will flash on the display and then the air pressure will automatically pump up to 195 mmHg. If blood pressure tends to be on the high level, the air pressure will automatically increase to the required level for measurement. \* Do not move or talk in the midst of taking blood pressure measurement.
- d. After the air pressure is increased, it will slowly decrease. When the pulse rate is detected, HEART RATE symbol will start flashing.

**\*Note!**

- If the cuff does not stop inflating, remove the cuff at once.
- To interrupt the measurement, you may press the   $\frac{\text{START}}{\text{STOP}}$  button. The cuff will deflate immediately after a button is pressed.





- e. After taking blood pressure measurement, the Systolic rate, Diastolic rate and pulse rate will be on the display for 1 minute.

**D. Storing, recalling and erasing measurement data:**






- a. Storing data: 60 measurement values for 2 users each (120 memory in total)

After each blood pressure measurement, the Systolic rate, diastolic rate, heart rate and the time & date of specific day will be automatically stored. The memory holds the latest 60 measurement data. If more than 60 measurements, the memory will automatically clear out the earliest data.


b. Recalling data:

- (1). Press " M " button. If there is no data in the memory, only TIME/DATE and USER symbol will appear on the display. If yes, the first reading will be the average of the latest 3 measurements. (The average value dose not appear if there are two or fewer measurements stored in memory.)
- (2). Press " M " button again, the latest measurement will appear with the number as well as the recording date and time. The data called up on the display is numbered accordingly. After reading the recalled data as rotator 60-set of the stored data, press " M " to switch to normal time.
- (3). To discontinue in the midst of reading of the data, press "  <sup>START</sup><sub>STOP</sub> " button.
- (4). You can select USER memory (  ↔  ) by pressing "  " button.

c. Erasing data:

- (1). Press " M " button and press "  " to select USER (  ↔  ).
- (2). Press hold "  " and "  " button to clear memories. " CLA " show up on the display for 3 seconds.

**E. To change batteries:**

When "  " show up on the display, the battery is weak. Change the batteries or it will not be possible to take blood pressure measurement. All batteries used must be the same type. Do not mix alkaline, standard(carbon-zinc) or rechargeable (cadmium) batteries. Do not mix old and new batteries.

## **10.MAINTENANCE:**

- ⦿ Use a piece of cloth with water or mild cleansing agent to clean the case and then use a piece of dry cloth to wipe it dry.
- ⦿ Do not use gas or any strong cleansers in cleaning.
- ⦿ When the unit is not to be used for a long time, remove the batteries. (Leaking of battery liquid can cause trouble)

## **11.SAFE-KEEPING:**

- ⦿ Always keep the unit in the carrying case after its use.
- ⦿ Do not put the item directly under the sunlight, in high temperature, or humid and dusty places.
- ⦿ Do not store in extremely low (less than - 20 °C) or high(more than 70 °C) temperature.

## **12.TO PREVENT MALFUNCTION:**

- ⦿ Do not in any way twist the wrist cuff.
- ⦿ Do not start the air pressure when the wrist cuff is not wrapped around the wrist.
- ⦿ Do not attempt to disassemble or change any parts of the monitor including wrist cuff.
- ⦿ Do not drop the product or put it through strong impact.

## **13.WARNING:**

- ⦿The device measures the blood pressure of adult only.
- ⦿The device is not supposed to be used if your wrist has any wound or injury.
- ⦿In the event of the cuff pumping up and not stopping, please open the cuff at once.
- ⦿To ensure precise measurement reading, recalibration of the device is recommended after 2 years from the date of purchase. Shipping plus handling cost and recalibration service fee shall be charged accordingly.

### **Limited Warranty**

This device is warranted to be free from manufacturing defects for a period of 1 year from the date of purchase. Within the warranty period, should there be any manufacturing defect found and repair is needed, please contact your local distributor accordingly.

Please note warranty does not cover damage caused by, including but not limited to: misuse or abuse; accident; the attachment of any unauthorized accessory; alteration to the product; improper installation; unauthorized repair or modification; improper use of electrical/ power supply; dropped product; failure to follow required maintenance and safe-keeping; transportation damage.

## 14.SPECIFICATIONS:

Model Number	:CH-618
Method of Measurement	:Oscillometric
Range of Measurement	:Pressure 0 ~ 300 mmHg pulse 40 ~ 199 beats/minute
Accuracy	:Pressure +/- 3 mmHg, Pulse +/- 5% of reading
Inflation	:Automatic inflation (Air Pump)
Deflation of Pressure	:Automatic air release control valve
Exhaust	:Automatic exhaust valve
Display	:Liquid Crystal Digital Display
Sets of Memory	:60 sets for 2 users each
Unit Dimension	:L70XW72XH30mm (L2.8XW2.8XH1.2 inch)
Unit Weight	:Approx.127g (Batteries excluded and Cuff included.)
Cuff Size	:Wrist circumference approx. 13.5 - 19.5 cm (5.3-7.7 inch)
Operating Temperature	:Temperature: 10 ~ 40 °C (50 ~ 104 °F) Humidity: 15% ~ 90% R.H.
Transportation/ Storage Temperature	:Temperature: -20 ~ 70 °C (-4 ~ 158 °F) Humidity: ≤ 90% R.H.
Auto power off	:Whenever not used for 1 minute
Power Supply	:2 x 'AAA' (2x1.5 V) Alkaline battery (3V DC)
Battery Life	:Approx. 250 times measurement
Accessories	:Carrying case, instruction manual 2 pcs "AAA" battery

These specifications are subject to change without notice for purpose of improvement.

## Note:



This blood pressure monitor complies with the EC Directive and bears the CE mark "CE0197". This blood pressure monitor also complies with mainly following standards,(included but not limited)

Safety standard:

EN 60601-1 Medical electrical equipment part 1: General requirements for safety

EMC standard:

EN 60601-1-2 Medical electrical equipment part 1-2: General requirements for safety- Collateral standard: Electromagnetic compatibility- Requirements and tests

Performance standards:

EN 1060-1 Non-invasive sphygmomanometers - General requirements

EN 1060-3 Non-invasive sphygmomanometers - Supplementary requirements for electromechanical blood pressure measuring systems.

EN 1060-4 Non-invasive sphygmomanometers - Test procedures to determine the overall system accuracy of automated non-invasive sphygmomanometers.



Important/Caution/Note!  
Read the operating instructions.



Follow instructions for use.

**Classification:**

- BF type applied part
- Internally powered equipment
- IPX0
- Not suitable for use in presence of flammable anaesthetic mixture with air or with Oxygen or nitrous oxide
- Continuous operation with short-time loading

**BF**

To avoid inaccurate results caused by electromagnetic interference between electrical and electronic equipments, do not use the device near a cell phone or microwave oven.



Discard the used product to the recycling collection point according to local regulations.

**Manufacturer:****HEALTH & LIFE Co., Ltd.**

9F, No. 186, Jian Yi Road, Zhonghe District,  
New Taipei City, Taiwan



Authorized Representative in the European Community:  
**EMERGO EUROPE**  
Molenstraat 15, 2513 BH, The Hague, The Netherlands

## WEEE MARK

If you want to dispose this product, do not mix with general household waste. There is a separate collection systems for used electronics products in accordance with legislation under the WEEE Directive (Directive 2002/96/EC) and is effective only within European Union.



## Information for Users on Collection and Disposal of used Batteries.

The symbol in this information sheet means that used batteries should not be mixed with general household waste.

For proper treatment, recovery and recycling of used batteries, please take them to applicable collection points.

For more information about collection and recycling of batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.



Pb



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