

# Wrist Electronic Sphygmomanometer

## Wrist Electronic Sphygmomanometer *Operation Manual* **CK-W358**



Before using this product, please read this manual carefully.  
In order to look up at any time, Keep it carefully for using in the future.  
Please use correctly based on the fully understanding.

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## ***Safety Precautions***

The warnings and legends in the manual are intended to enable you to use the product safely and correctly and to prevent injury to you and others.

❑ *The legends, warnings and their meanings are as follows:*

⓪ It indicates constraint

Ⓧ It indicates prohibited behaviors

Ⓜ It indicates the type-BF application section

⚠ It indicates Notes

❑ *Scope of Application:* Applicable to measuring the adult systolic pressure, diastolic pressure and pulse rate.

### **⚠ Notes**

⓪ It is very dangerous for the patients to make self-judgment and self-treatment through the test results, please follow the professional physician's interpretation to the measurement results.

⓪ When a common arrhythmia (such as atrial premature beats, premature ventricular contraction,

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atrial fibrillation, etc.) occurs, the measured value may be inaccurate or blood pressure can not be measured.

❶ For the patients with serious dysaemia, please use it under the guidance of doctor.

⊗ It is very dangerous for the patients to make treatments through the test results of self-judgment.

❶ This product is only for human blood pressure measurement.

❶ Make sure you use a special wrist strap.

⊗ Please do not disassemble, repair, and modify privately.

⊗ Babies and those who cannot express themselves are not allowed to use it.

△ This product is 5 years of life time, and recyclable, should not be discarded at will.

△ This product is suitable for family use or self-daily monitoring of blood pressure (BP), if in extreme cases, such as arrhythmia, etc., the measurement results of BP can not be used as the judgment standard, please listen to the explanation on the measured values of sphygmomanometer by a professional physician.

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△ This product does not need to be calibrated during its validity period.

△ If stored outside of the indicated temperature and humidity range, the system may not be able to meet the claimed performance specifications.

△ The BP value measured by this device is equivalent to that by auscultation, and the error is in accordance with the requirements specified in IEC60601-2-30:1999.

△ The waste shall be handled in accordance with the relevant national environmental protection regulations.

△ *Notes (about the battery)*

Do not disassemble the battery.

Avoid using the battery near the heat sources or direct sunlight. It is dangerous to charge the battery with a non-dedicated charger.

Do not touch the leakage battery directly.

Do not charge the charger for a long term.

*Recommendations*

Do not vigorously bend your wrist strap.

Do not hit and drop the host.

Do not press the wrist strap before you take it on your wrist.

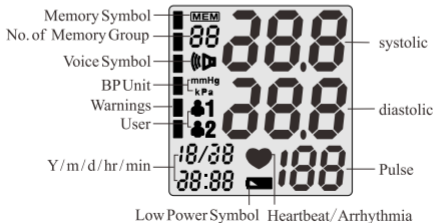
Do not measure the blood pressure on a running vehicle.

## **Product Compositions**

**Composition:** The product consists of the host and wrist strap.



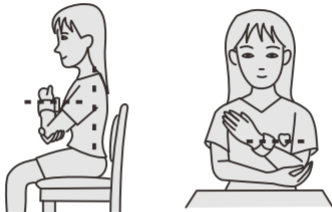
## **Display Screen**



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## ***Correct Measurement Posture***

- ❑ Please measure in a relaxed, quiet sitting posture.
- ❑ Keep the wrist scrap at the same height as the heart.



### ***△ Notes (about the measuring)***

Please measure blood pressure every day at same times, use the same arm , the same posture.

Suggest that measure after waking up an hour and before going to bed in evening.

The different position of wristband may affect the measurement result.

Don't touch main unit and wristband during measuring.

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Please keep quiet and relax the body during measuring.  
Keep calm 5 minutes before measure.

Don't talk during measuring.

Please wait for more than 5 minutes for continuous measuring.

Please keep away from the TV, mobile phones, etc., in order to avoid electromagnetic interference.

### ***Use of the wrist Strap***

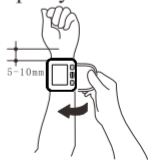
- ❑ Face up the palm and sphygmomanometer host, and wrap the wrist strap at 5-10mm (about the width of one pinkie) away from the left wrist joint.
- ❑ Pinch the end of wrist strap and roll it up over your wrist as you pull it. Keep it tight. Don't leave any space between the wrist strap and wrist.
- ❑ The long part of wrist strap may be properly reflexed and fixed.

#### **△ Notes**

For accurate measuring, please wind the wrist strap correctly.

Please expose your wrist when measuring.

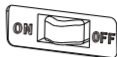
Do not roll up the wrist scrap too tightly.





## ***BP Measurement***

- Push the toggle switch button to ON to turn on the power.
- Press the START/STOP button, the wrist strap is automatically pressurized to start measuring.
- After the measuring is completed, the blood pressure and heart rate values are automatically displayed.



Power Toggle Switch

The air inside the wrist strap will be automatically discharged.

The measured result is shown in mmHg.

The heart rate value is converted in "Times /min".

- Press the START/STOP button to close the display.

If you forget to close the display, the display will turn off automatically after 3 minutes.

- Push the toggle switch button to OFF to turn off the power.

### **▲ Notes**

- If the error "Err" appears on the display, the measuring can not be performed correctly. Please refer to "Error Messages and Troubleshooting" on page 16.



Result Display

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- ❑ If the wrist congestion occurs after repeated measurements, the blood pressure value will be not correct, please measure it again after the blood pressure is unblocked.
  - ❑ When a common arrhythmia (such as atrial premature beats, premature ventricular contraction, atrial fibrillation, etc.) occurs, the measured value may be inaccurate or blood pressure can not be measured.
  - ❑ Do not keep inflating for a longtime, otherwise it may cause acute wrist injury.

### ***Use of the Memory Function***

- ❑ The sphygmomanometer can automatically store the blood pressure and heart rate values, allowing you to view up to 90 sets of memory measurements.
- ❑ If 90 sets of memories are saved in Memory, when you save the 91st set of memory, the oldest set of memory values will be deleted.
- ❑ Press the MEM button to display the latest measurement results.
- ❑ Press the MEM button repeatedly to read the stored measurement results in turn. (01 indicates the latest measurement result, 02 represents the penultimate measurement result, and so on.)

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❑ Press the START/STOP button again to end the display of measurement results.

❑ During the memory query process, if there is an arrhythmia memory, ♥ will flash to indicate arrhythmia, or when the low power is detected, will be displayed.

❑ In the memory query mode, you can press the MEM button for 3 seconds to delete all the memory data of current user, where NO is displayed on the display screen, as shown on the right.

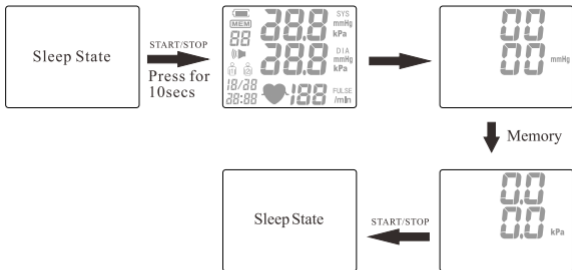


No Memory Display

❑ Shortly press the MEM button to query the memory set without memory storage, then NO is displayed, as shown on the right.

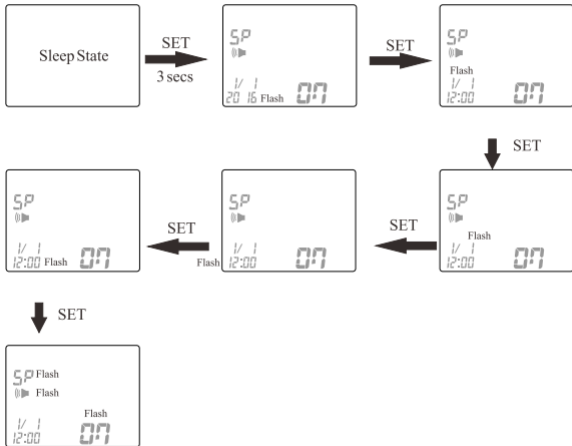
## ***Unit Conversion Function***

In the sleep mode, press the START/STOP button for 10 seconds to enter the selected BP unit mode, shortly press the MEM button to switch “mmHg” or “kPa” as the BP unit, shortly press the “Start” button or no operation for 15 seconds, it enters into the Sleep State (See below).



## ***Time Setting Function***

Press the SET button for 3 seconds to enter into the Time Setting Mode, that "Year" flashes indicates being adjusted, shortly press the SET button to select the month / day / hour / minute / language settings .(as shown below)



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In the Time Setting Mode, shortly press the MEM key to raise the time.

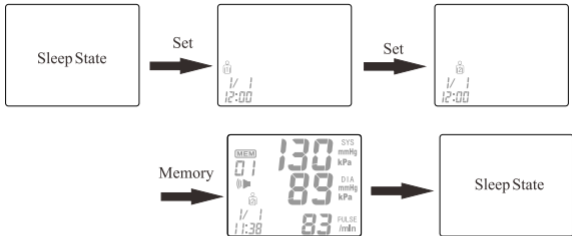


For the voice-type products, in the time mode, shortly press the MEM to select voice ON or OFF.



## ***User Switch***

Shortly press the SET button to query the time and current user, and shortly press the SET button again to switch the user. After switching the user, press the MEM button to check the current user's history.



## ***Lithium Battery Charging***

When the lithium battery is low, connect the charger to charge and the charging state is as follows: A total of three small squares indicate three kinds of electric states, and the flashing small squares represent different current voltages. When the charge is complete, the three small squares are all normally lit.

Adapter Please use a 5V 1A charger.



## ***BP Basic Knowledge***

Blood pressure (BP) is the pressure on the vessel wall when the blood passes through the artery.

Systolic blood pressure (maximum blood pressure): Arterial pressure when the heart systolic blood is delivered.

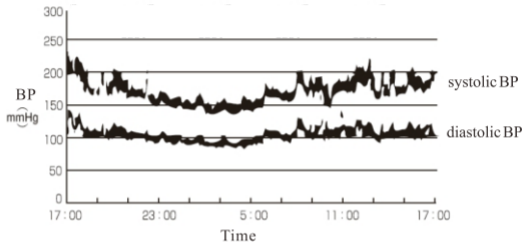
Diastolic blood pressure (minimum blood pressure): Arterial pressure when the heart diastolic blood is delivered back to the heart.

In general, morning blood pressure is low, but will increase over time from noon to evening. In summer, blood pressure is lower, while in winter, blood pressure is higher.

BP changes and variations (the following figure shows blood pressure changes every five minutes of

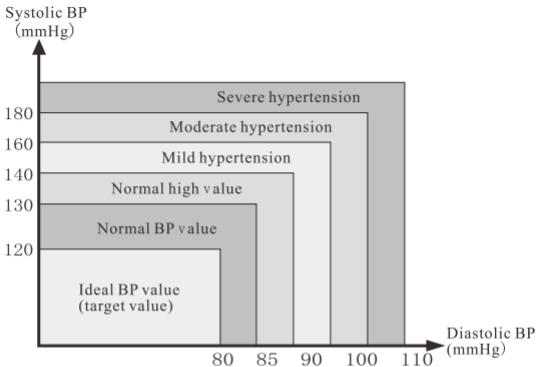


the day). Pulse rate: it will change due to different physical conditions as the same to that of the BP.



Classification of blood pressure by WHO:

The World Health Organization (WHO) and the International Society Hypertension (ISH) have established the blood pressure classification criteria, as shown in the following figure. Although there are no universally recognized criteria for the definition of hypotension, generally speaking, systolic blood pressure below 100mmHg is generally considered to be hypotension.



The blood pressure classification was revised according to WHO / ISH in 1999;  
This classification is based on the measurement results of the seated patients  
from hospital outpatient department.

## ***Error Messages and Troubleshooting***

Failure	Cause	Solutions
Press the button, no any response	The battery has run out	Charge it in time
The measured BP value is abnormally high(low)	Wrist strap is not properly wrapped	Correctly wrap around the wrist strap according to the Manual
	Move or speak while measuring	Move or speak while measuring
	The wrist strap is not the same height as the heart.	Please measure it in the position required by the Manual
Not pressurized	The wrist strap leaks	Please contact the relevant after-sales departments
	The battery voltage is not enough	Please continue to charge

### Correspondence Table of LCD Error Prompt and Error cause

LCD error prompt	Error cause
“ErU”	The gas charging is less than 30 mmHg within 7 seconds
“ErH”	It automatically exhaust when the overpressure is 295 mmHg for more than 20 ms.
“Er1”	The pulse can not be detected.
“Er2”	Too much interferences (movement, speaking, and magneticfield, etc., during the measuring)
“Er3”	Measurement results are incorrect

## Specifications

Model	CK-W358
Display	LCD digital display
Measuring method	Oscillometric methods
Measuring range	Blood pressure:(0-280)mmHg Pulse:(40-199)times/min
Accuracy	Blood pressure:±3mmHg Pulse:within±5% of the measured data
Memory Capacity	double 90 sets of measurement data
compression	Full automatic pressurization mode
Decompression	Full automatic decompression mode
Exhaust	Full automatic rapid exhaust mode
Pressure induction	Semiconductor pressure sensor
Power supply	Lithium battery3.7V,type-BF
Operation temperature and humidity	+5°C~+40°C , 15%~90%R.H, 70kPa~106kPa
Transport and storage conditions	-20°C~+50°C , 15%~90%R.H, 70kPa~106kPa
Host weight	118g or so
Measuring range of wrist strap	The wrist circumference is 135-195mm or so
Host size	79mm (L) × 65mm (W) × 28mm (H)

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## ***Storage and Maintenance***

After the completion of using the sphygmomanometer, please put it in the storage box.

Do not straighten or bend the wrist strap, or slam into a machine.

Do not store the machine in the direct sunlight, high temperature, high humidity, dust, or exposure it to corrosive gases or water. Nor can the machine be operated in the environments described above.

Please use a clean, soft cloth with some water or neutral detergent, gently wipe the sphygmomanometer host or wrist strap, and then immediately dry it.

Do not use too much water to wash or wet the machine and wrist strap.

Do not use volatile, thinner, gasoline or alcohol to clean the machine.

Charge the battery once every 1 month.

For the date of manufacture, please see the outer packing.

Manual preparation date: April 23th, 2021

Version No. : V1.2

## **Appendix - Electromagnetic Compatibility Statement**

The wrist electronic sphygmomanometer conforms to the EMC test standard IEC60601-1-2:2014 □

**Table 1**

<b>Guidance and Manufacturer's Statements - Electromagnetic Emission</b>		
This equipment is intended for use in the electromagnetic environments specified below, and the purchasers or users shall ensure that it is used in these electromagnetic environments.		
<b>Emission Test</b>	<b>Conformity</b>	<b>Electromagnetic Environments—Guidance</b>
Radio-frequency emission IEC/CISPR 11	Group 1	The radio frequency energy of this device is applied only when the internal functions are running, so its radio frequency emission is very low, which has no electromagnetic interference to the electronic equipment nearby.
Radio-frequency emission IEC/CISPR 11	Type-B	This device is suitable for using in home network and networks which are directly connected to the public low voltage power supply of residences.
Harmonic radiation IEC61000-3-2	Not applicable	
Voltage fluctuation and scintillation radiation IEC61000-3-3	Not applicable	

## Table 2

Guidance and Manufacturer's Statements—Electromagnetic Immunity			
This device shall be used in the prescribed electromagnetic environments and the customer or user shall ensure that the equipment is used in the electromagnetic environments specified below.			
Immunity Test	Test Grade	Conformity Grade	Electromagnetic Environments—Guidance
Electrostatic discharge IEC61000-4-2	± 6KV Contact discharge ± 8KV Air discharge	± 6KV Contact discharge ± 8KV Air discharge	The floor must be made of wood, concretes or tiles. If the floor is paved with synthetic materials, the relative humidity is at least 30%
Electric fast transient pulse group IEC61000-4-4	± 2KV Double power line ± 1KV Double input/output line	Not applicable	The quality of network power must be a typical commercial or hospital environment.
Surge IEC61000-4-5	± 1KV line to line ± 2KV line to earth	Not applicable	
Voltage dips, short interruptions and voltage variations IEC61000-4-11	<5% UT (Dip>95% UT) 0.5 cycle 40% UT (Dip 60% UT) 5 cycles 70% UT (Dip 30% UT) 25 cycles <5% UT (Dip>95%UT) 5 seconds	Not applicable	The quality of network power must be a typical commercial or hospital environment. If the device needs to be kept running during the interruption of network power, we recommend the uninterrupted power supply of UPS.
Power frequency magnetic field (50/60Hz) IEC61000-4-8	3A/m	3A/m 50/60Hz	The Power frequency magnetic field shall be the electrical level in a typical commercial or hospital environment.
Note: UT refers to the AC network voltage before applying the test voltage.			

### Table 3

Guidance and Manufacturer's Statements—Electromagnetic Immunity			
This device shall be used in the prescribed electromagnetic environments and the customer or user shall ensure that the equipment is used in the electromagnetic environments specified below.			
Immunity Test	Test Grade	Conformity Grade	Electromagnetic Environments—Guidance
Conduction immunity IEC61000-4-6	3 Vrms 150k-80MHz	Not applicable	The floor must be made of wood, concretes or tiles. If the floor is paved with synthetic materials, the relative humidity is at least 30%.
Radiated immunity IEC61000-4-3	3 V/m 80M-2.5GHz	3 V/m	<p>The portable and mobile RF communication equipment must be used outside a specified distance from any part of the equipment and / or system (including cables). This isolation distance is calculated by the appropriate equation with the selected transmitter frequency.</p> <p>The formula for the recommended isolation distance is as follows:  <math>d=1.2 \times \sqrt{P}</math>  <math>d=1.2 \times \sqrt{P}</math> 80MHz to 800MHz  <math>d=1.2 \times \sqrt{P}</math> 80MHz to 2.5GHz</p> <p>Wherein, P is the rated output power of transmitter, in watts; d is the recommended distance in meters. The field strength of RF transmitter obtained from measuring a by the electromagnetic field must be less than the conformity grade within each frequency range b.</p> <p>Interference may occur near the device marked the following symbol: <b>T</b></p>
<p>Note 1: In 80MHz-800 MHz, apply the formula at a higher frequency range.</p> <p>Note 2: The above guidelines are not suitable for all situations, since the unknown structures, objects, and crowds can absorb and reflect the electromagnetic waves, which will affect the electromagnetic propagation.</p>			
<p>a The field strength of the base stations of radio mobile phone (cellular box wireless) and the terrestrial mobile radio receivers, antenna receiving devices, FM and AM radios as well as TV broadcasts can not be accurately estimated by using purely theoretical methods. In order to evaluate the electromagnetic environment generated by the solitary radio frequency transmitter, the methods of electromagnetic field measurement should be considered. If the field strength of equipment used exceeds the required RF level, it is necessary to observe whether the device will work properly. Once abnormal conditions have been detected, measures must be taken such as repositioning the device or moving it to other conditions.</p> <p>b In the frequency range of 150k -80MHz, the field strength should be less than 3V / m.</p>			



## Table 4

### Recommended Distances between This Device and Portable / Mobile RF Communication Devices

This device can be used in an electromagnetic environment where RF interference is controlled. In order to avoid electromagnetic interference, the customers or users should maintain the minimum recommended distances between the device and portable / mobile RF communication devices. The following recommended distance below is calculated based on the maximum output power of communication device.

Maximum rated output power of the transmitter (W)	Calculate the isolation distance (m) according to the transmitter frequency		
	150kHz-2MHz $d = 1.2 \times \sqrt{P}$	80MHz-800MHz $d = 1.2 \times \sqrt{P}$	800MHz-2.5GHz $d = 1.2 \times \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.34
10	3.69	3.69	7.38
100	11.67	11.67	23.34



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