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## **WARNING**

We highly appreciate you choose this JAWON product.

Those who will use this blood pressure monitor are strongly advised to read this manual thoroughly and understand all instructions and warnings before using it.

Information in this manual is made for informational purpose and this manual and product are not meant to be a substitute for the advice provided by your own physician or other medical professional.

You should not use this information contained in this manual or this equipment for diagnosis or treatment of health problem or prescription of medication.

If you have or suspect that you have a medical problem, consult your physician promptly.

## ABOUT BLOOD PRESSURE

### 1. What is blood pressure?

Blood pressure refers to the force or pressure exerted on the artery vessel when blood flows through them. In order to allow the blood to supply nutrition and oxygen to every organ and corner of the body, a certain level of pressure is necessary and it comes from the each time the heart beats or contracts.

The heart activity is broken down into two phases called Systole and Diastole. Systolic is the pressure to send blood out into the body and Diastolic is the pressure creating the heart pulls blood back through it.

Blood pressure is recorded as systolic over diastolic, as shown below.



systole occurs during the contraction and emptying of the heart

115/75



diastole occurs during the relaxation and filling of the heart

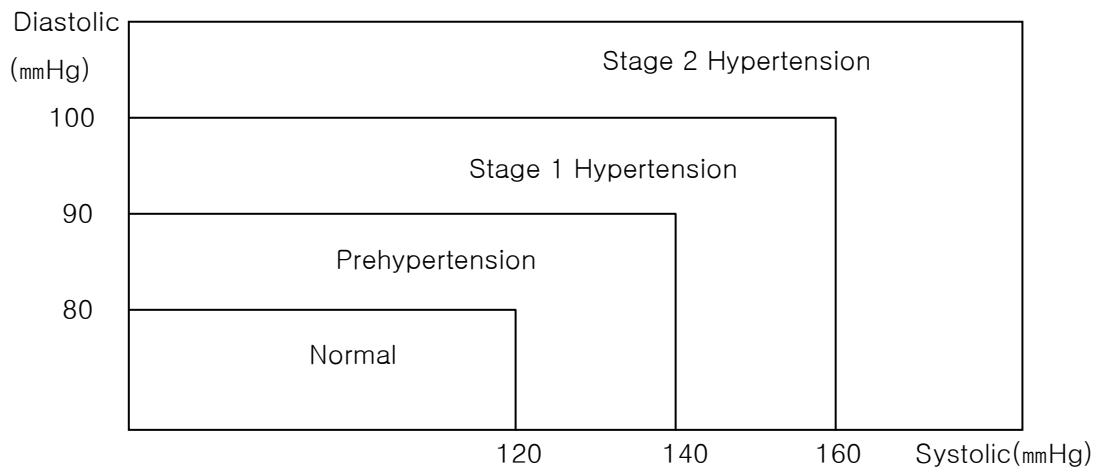
### 2. What makes my blood pressure fluctuate?

Blood pressure changes in response to many factors.

These factors include changing in the temperature and humidity, physical exercise, restlessness due to stress, fear, anxiety, anger, food and an individual's physical condition.

### 3. Classification of the blood pressure

: National High Blood Pressure Education Program, National Heart, Lung and Blood Institute, NIH (JNC7)



#### 4. Why do I have to check blood pressure at home?

Home monitoring may help alleviate the medical phenomena ‘White Coat Hypertension’ which causes many individuals’ blood pressure to be higher when taken in a medical office setting. The elevation of it may be due to several factors, including stress, nervousness, or increased sympathetic activity associated with the clinical environment. It may cause your blood pressure to rise about 20 to 50mmHg higher than usual. When monitoring at home, you may get a truer indication of your blood pressure in a usual, relaxed state. Regular home monitoring provides you a valuable over time readings to give to your physician to determine and diagnose and also provides you the information when your blood pressure falls or rises to enable to manage your health between doctor visits.

#### 5. What is the benefit of data transmissible blood pressure monitor?

Without going to a hospital, you can get physician’s advice with data transmissible blood pressure monitor.

ECHO-FT is a Home to Hospital bi-directional networking blood pressure monitor that you can transmit saved data from the device to your personal computer through interface then send your physician them. Your physician will read those to find health problems and give proper advice you. With the support of the analyzing program, ECHO-FT tracks your blood pressure changes sophisticatedly and enables you to realize the characteristics of yours

and control it. Periodically monitored and memorized readings reflect the cardiovascular state of you under conditions more representative of your normal daily life-style than those inherent in a clinical environment. It let you learn when your blood pressure falls or rises. Also it let your physician optimize the treatment program corresponding your circadian rhythm of blood pressure. Therefore, it is important to take regular daily monitoring and keep clear records. ECHO-FT is a time and cost saving healthcare networking instrument.

## INTRODUCTION

Thank you for purchasing the ECHO-FT.

### **Intended use**

This home blood pressure monitoring device is indicated for use in the noninvasive measurement of systolic and diastolic blood pressure and heart rate in adult age 18 and over, in a home care environment. ECHO-FT is designed to enable a person who suspects some trouble with blood pressure to check it at home.

### **Fuzzy logic and Oscillometric method**

Your unit employs fuzzy logic method to inflate and an oscillometric for measurement of blood pressure and pulse, which refers to check blood pressure by measuring oscillation in the cuff while the artery of the arm oscillate reflecting contracts and relaxes every heart beat.

### **Data transmissible and analyzing program**

This device is data transmissible. You can transmit readings saved in the memory of the device to your personal computer, and then mail them to your physician to get advice from her/him at home. ECHO-FT is a time saving device partially replacing a necessity of your visit to your physician. Additionally the data transmitted to your PC can be analyzed and tracked sophisticatedly with analyzing software optionally offered by the manufacturer.

### **Software 'Hour 24'**

'Hour24' is a software for windows. It takes data transmitted from ECHO-FT and enable to send them to the doctor.

Additionally the data can be analyzed and tracked with it.

### **Noise detecting**

As ECHO-FT is contrived to detect moving or noising during measurement process and displays it both on the real time and recalled readings on LCD. You or your physician can determine if the readings are reliable.

### **Voice message**

It can make you monitor blood pressure easily and know the result clearly without

the third person's help. Especially it is useful for the elderly person.

### **Memory feature**

It has 64 reading memory capacity recorded monitoring date and time supported **Built-in calendar and clock** which are input them automatically to each reading.

### **Accuracy**

Blood pressure measurements determined with this device are equivalent to those obtained by a trained observer using the cuff/stethoscope auscultation method, within the limits prescribed by the American National Standard, Electronic or Automated Sphygmomanometers.

### **Note**

Blood pressure constantly fluctuates during of a day, so that monitoring should be done at least three times and determined. Occasional high or low readings do not mean your monitor is malfunctioning or you are ill. The important thing is that you have information to talk with your doctor about normal and abnormal results corresponding your circadian rhythm.

## WORD DEFINITIONS

To ensure safe operation and durable performance stability, it is essential that you fully understand the functions, operation and maintenance instructions by reading this manual carefully before using the unit.

Particular attention must be paid to all warnings, cautions and notes incorporated herein. The following conventions are used throughout the manual to denote information of special emphasis.



Important information to indicate the presence of a hazard in which may arise severe personal injury, death or substantial property damage if the warning is ignored.

### NOTE

Important information to notify the user of operation or maintenance information in which is important but not hazard-related. Hazard warning should never be included under the note signal word.

- ※ Property damage refers to a wide range of damage involving your house, household goods, domestic animals, and pets etc..



## NOTE TO USER

- For all damages or injuries caused by user's incorrect operation or failure in maintenance the unit relieves, the manufacturer and its agent of the system do not have any responsibility and non-compliance with specifications.
- Please keep this manual together with the appliance since it is compiled to provide the maximal convenience to those who use this device
- Defective unit or accessories that is shipped off from customer to Jawon medical Co. or its authorized dealer for service must be packed in the safe way and the replacement carton. Shipping and insurance cost for returning of defective unit must be prepaid by customer.

## CLASSIFICATION & COMPLIANCE WITH STANDARD

Classification and Compliance with Standards Model ECHO-FT manufactured by Jawon medical is classified as;

- ECHO-FT is specified as Class 2 type BF unit under the standard of IEC60601-1 (Safety of Medical Electrical Equipment).
- Internally powered equipment (Battery : 4 × LR6-AA)
- Ordinary equipment without protection against ingress of water
- Equipment not suitable for use in presence of a flammable anesthetic mixture by standard of IEC60601-1 (Safety of Medical Electrical Equipment)
- Equipment that complies with Class B for Noise-Emission, Level B for Noise-immunity by standard of IEC60601-1-2 (Electromagnetic Compatibility Requirements)
- This blood pressure meter complies with the EN1060-1 : 1995 Non-invasive Sphygmomanometers general requirements as well as EN1060-3 : 1997 supplementary requirements for electro-mechanical blood pressure measuring system.

### NOTE

1. Jawon's accessory equipment connected to the analog and digital interfaces are certified according to the respective IEC standards.  
(e.g. IEC 950 for data processing equipment, IEC 601-1 for medical equipment and system standard EN 60601-1-1:1993)
2. When recycling and proper disposal after their useful lives, the device shall be disposal in accordance with national laws.

## **FCC Information**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This Device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for CLASS B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

- 1.1. Reorient or relocate the receiving antenna.
- 1.2. Increase the separation between the equipment and receiver.
- 1.3. Connect the equipment into an outlet on a circuit different from that to which receiver is connected.
- 1.4. Consult the dealer or experienced radio/TV technician for help.

## **WARNING**

Changes or modifications not expressly approved by the manufacturer could void the user's authority operate the equipment.

## SAFETY PRECAUTIONS

ECHO-FT is designed and manufactured in deep consideration for user's and operators' safety and completing reliability of the unit based International Standards for medical equipment.

The following precautions must be observed for additional safety ;

1. User must not touch or handle the inner side the system at anytime. It may cause an electrical shock and flame out.
2. The unit has been factory-adjusted for optimum performance. Do not attempt to modify or adjust any preset controls or switches except those specified in this manual for operation. If any modification is desired, ask manufacturer or its authorized dealer for service.
3. If you have any trouble with the unit, switch it off immediately, and contact manufacturer or its authorized dealer for assistance.
4. Avoid the following environments for storage and operation
  - Where the ambient temperature deviates  $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$  for storage.
  - Where the ambient temperature deviates  $10^{\circ}\text{C} \sim 40^{\circ}\text{C}$  for operation.
  - Where the atmospheric pressure deviates  $70\text{kPa}(700\text{mbar})\sim 106\text{kPa}(1060\text{mbar})$ .
  - Where the humidity is above 95% for storage and 75% for operation.
  - Where the unit is exposed to spray or splashing water.
  - Where the unit is exposed to dust.
  - Where the unit is exposed to water vapor.
  - Where the unit is exposed to high density oil vapor.
  - Where the unit is exposed to salty atmosphere.
  - Where the unit is exposed to explosive gas.
  - Where the unit is exposed to excessive shocks or vibrations.
  - Where the angle of inclination of mounting surface is in excess of 10 degrees.
  - Where the unit is exposed to direct sunlight.
5. Do not use the unit on infants or persons who cannot express one's intension.
6. Do not use the unit for any purpose other than measuring blood pressure.
7. Do not use a cellular phone near the unit improper operation may result.
8. Do not force to bend the arm cuff or the air tube excessively.
9. When removing the air tube, pull at the connector.
10. Do not apply strong shock or drop the main unit.

11. Do not inflate the arm cuff without it being wrapped on the arm.
12. The battery liquid may leak and damage the main unit. Please observe the following points.
  - When you are not going to use the unit for an extended period of time (approximately three months or more), remove the batteries.
  - Replace the exhausted batteries with new ones immediately.
  - Do not use exhausted and new batteries together.
  - Do not insert the batteries with their polarities in wrong direction.

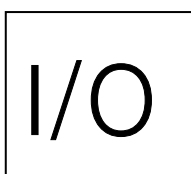
## SAFETY SYMBOLS

The International Electro-technical Commission (IEC) has established a set of symbols for medical electrical equipment that classify a connection or warn of any potential hazards. The symbols are shown below.

Save these instructions for your safety.



- Isolated patient connection (IEC 60601-1 Type BF)



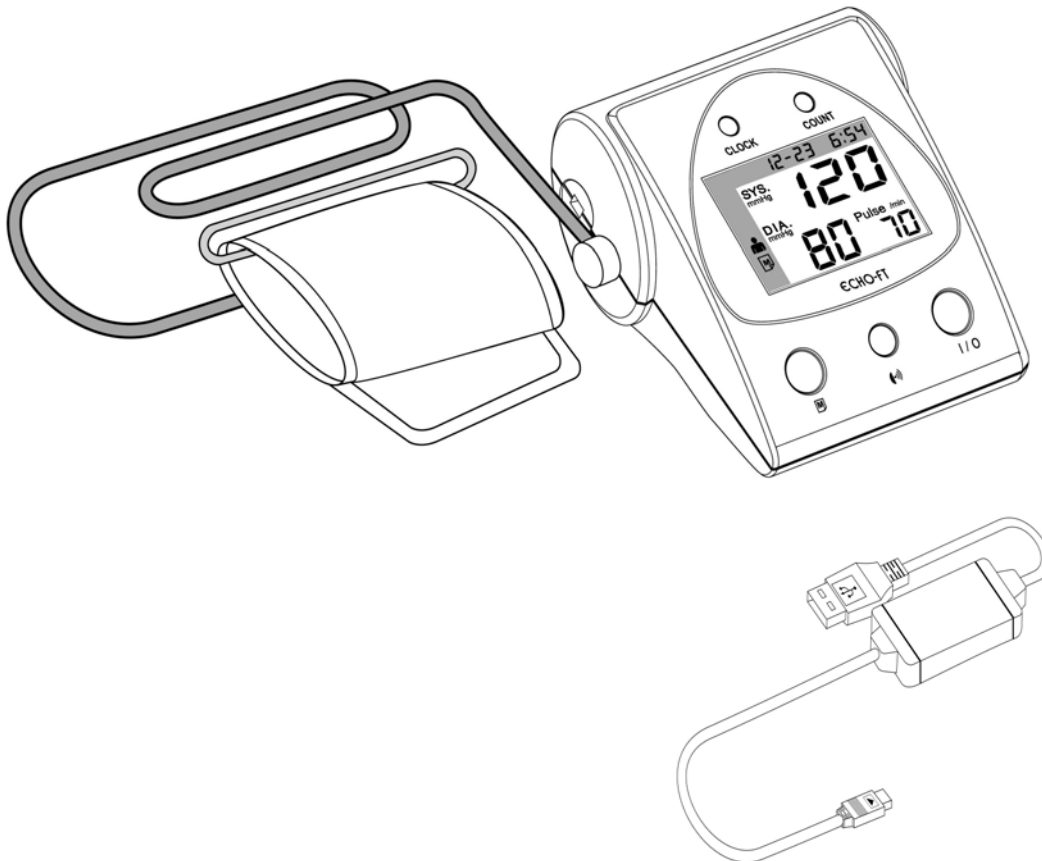
- I and O on power switch represent ON and OFF respectively



- This symbol identifies a safety note.  
Ensure you understand the function of this control before using it. Control function is described in operation manual.

## PART NAMES & FUNCTIONS

### 1. Main unit and accessories



#### Button

**I / O** : Power ON/OFF, automatic start, enter to sound and volume mode

**M**: Memory view, sound off and volume control button

**☛** : Button to transmit data

**CLOCK** : Button to enter to the mode to set date and time

**SETUP** : Number up button to set date and time

**USB cable** : To use data transmission refer to owners' manual of software 'Hour 24' how to use or how to install.

## 2. SYMBOLS IN LCD INDICATOR



▲ Pressurization : Displays during inflation

▼ Exhausting : Displays during deflation

DATE (10-01) TIME (12 : 00) : month-day hour : minute

♥ : Starts flash when pulse is detected

⊗ : Displays when the batteries need to be changed

M : Memory indicator

🔊 : Displays when sound is ON

👤 : Indicates noise or movement sensed

01 : Indicates the number of stored results

## PREPARATION FOR MEASUREMENT

Exercise or any kind of activity may affect blood pressure. Rest about 5 minutes before monitoring.



Urinating may elevate blood pressure. Start monitor a few minutes after urination.



Lack of sleep or constipation causes the blood pressure to rise.



Cold weather causes the blood pressure to go up. Maintain indoor temperature at 20°C or so and warm your body before checking.



Drinking caffeinated beverages such as coffee, tea, cokes and also smoking can cause your blood pressure to rise.



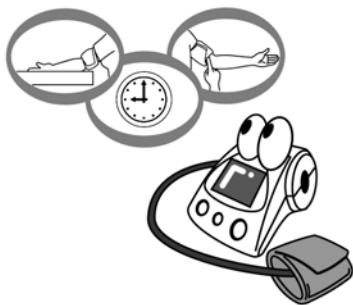
Moving or speaking while checking causes errors.





## PREPARATION FOR MEASUREMENT

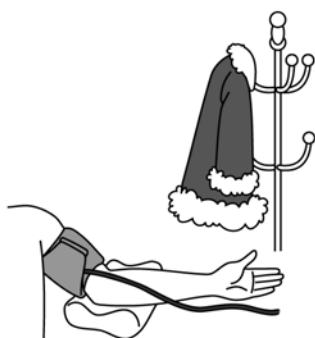
To compare the results, choose the readings got under the same condition. (monitoring site, position, time etc.)



Continuous monitoring causes arm congested and inaccurate readings. Allow 3~5 minutes interval between measurements.



Take off thick coat, sweater or tight-fit clothes from the monitoring arm. To fit the cuff on the naked arm is advised.



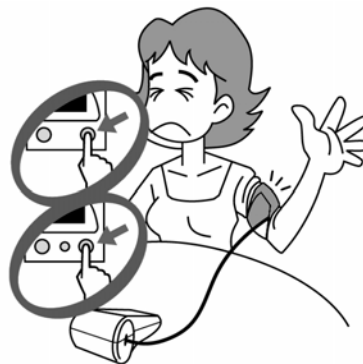
When you roll up your sleeve, ensure it does not constrict the blood flow in your arm.



The position sitting legs crossed or using on a lower table than heart level may increase abdominal pressure that resulted in elevated blood pressure.

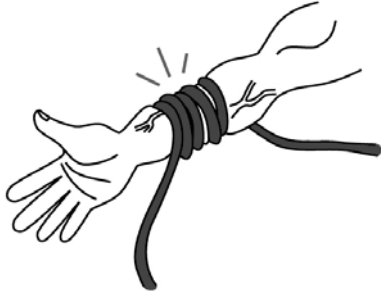


When an over pressurization rises or to stop the pressurizing, press O/I button. The cuff will stop inflating and the air will exhaust from the unit rapidly.

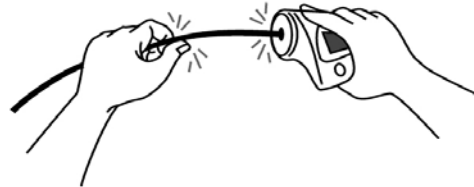


## PREPARATION FOR MEASUREMENT

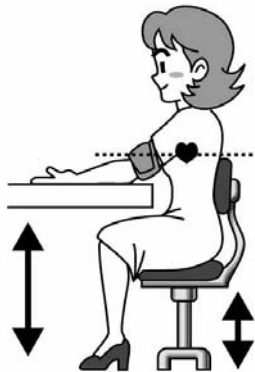
Do not place on other parts of the body except the arm.



Do not pull it out by force.



Control the level of the chair and desk to enable your monitoring arm to place at the same level as your heart.



When monitoring arm is higher than your heart level, the blood pressure will be measured lower.



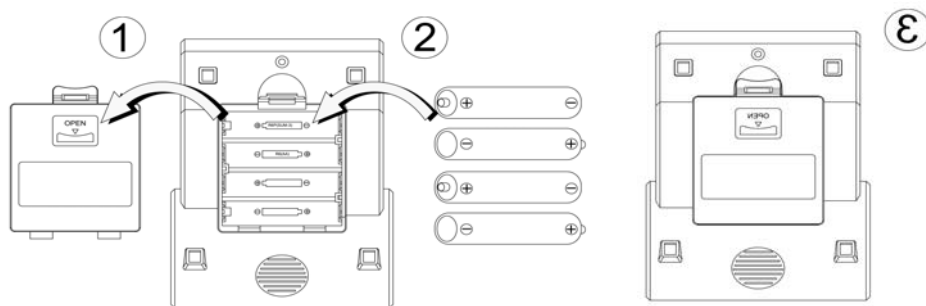
When monitoring arm is lower than your heart level, the blood pressure will be measured higher.




## BATTERY INSERTION / REPLACEMENT

### 1. How to install the batteries

- ① Pull the battery cover and open it.
- ② Insert four AA type batteries to match polarities as shown below.
- ③ Cover the lid of battery case



### 2. Replacement of the Batteries

- ① If the  indicator flashes on LCD, you should transmit memorized readings from your device to your personal computer first. Then change all batteries.
- ② Replace +(positive) and -(negative) polarities should be matched the polarities of the battery compartment as shown above 1-②  
If the polarities of the battery are positioned incorrectly, the unit does not work.  
When you change the batteries, use the same type.  
Remove the used batteries immediately to protect the product from damage.
- ③ When you are not going to use the unit for an extended period of time (approximately three months or more), remove the batteries

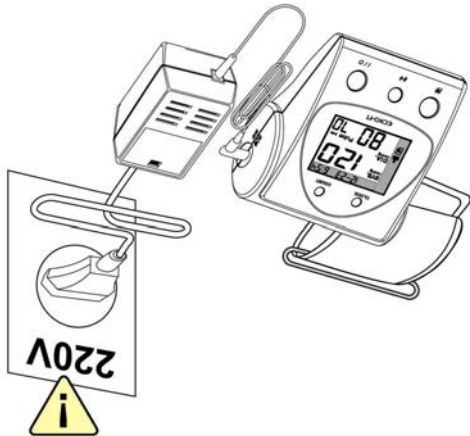
#### Note

If the readings are not transmitted before batteries are changed or used up, you might lose them.

#### Note

If battery is not disposed properly, it can be harmful. Protect the environment by taking exhausted batteries to authorized disposal place.

## CONNECTING OF AC ADAPTER



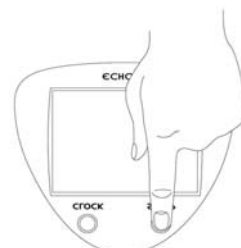
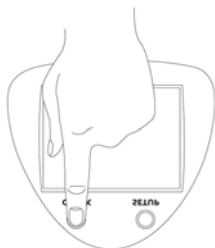
Connect the AC adapter between unit and wall outlet

## SETTING DATE AND TIME

- Sequence is Year→Month→Day→Hour→Minute.

### 1. Entering the mode to set date and time.

- ① After change batteries the mode appears on LCD automatically.
- ② At power off, press [CLOCK] button. [YEAR00] will appear on the screen, and [00] flashes.

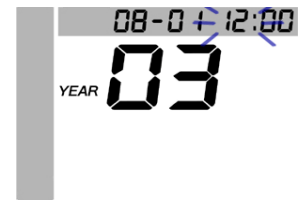


### 2. Setting up

- ① Press [SET UP] button to set the year. Whenever 'SETUP' button is pressed or you keep it pressing, the number will increase gradually or rapidly by '01'. Its range is 00 to 99.
- ② After setting the year, press [CLOCK] button again. The month indicator, the first two numbers in upper LCD line, will flash. Set it by pressing 'SET UP' button. Its range is 01 to 12.



- ③ After setting the month, press [CLOCK] button once again. The day indicator, the second two numbers in upper LCD line, will flash. Set it as same way.



Its range is 01 to 31.

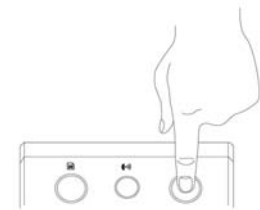
- ④ After setting the day, press [CLOCK] button again. The hour indicator, the third two numbers in upper LCD line, will flash. Set it as same way.



Its range is 00 to 23.

- ⑤ After setting the hour, press [CLOCK] button once more. The minute indicator, the last two numbers in upper LCD line, will flash. Set it. Its range is 00 to 59.

- ⑥ After setting the minute, please power off then on.

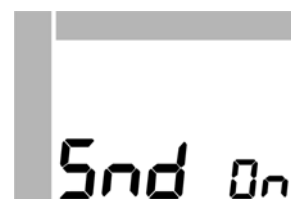


**Note :** When you press [I/O] button after setting the date and time, they are stored coinciding with the power off. If you press [I/O] button on your way to set, what you have done will be stored. The date and time are maintaining during power off but they will return to initial status when batteries are changed or AC adapter is pulled out from a wall outlet.

## SOUND ON/OFF AND VOLUME CONTROL

### 1. Sound ON/OFF

- ① If you press [I/O] button around 3 seconds, [Snd On/OFF] signal appears on LCD.
- ② By pressing [M] button to change it.
- ③ Press [I/O] button to complete it.



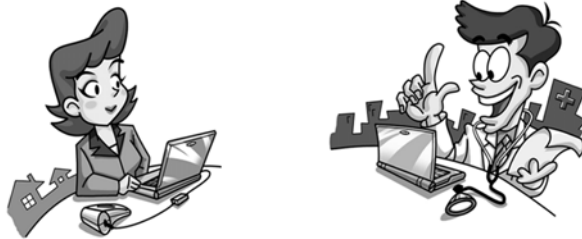
### 2. Volume control

- ① If you keep [I/O] button pressing after appearing [Snd] signal, the signal is changed to [voL 1].
- ② Select the volume size by pressing [M] button. Its range is 1 to 4.
- ③ Press [I/O] button to complete it.



## DATA TRANSMISSION

### 1. How to transmit monitoring data to your PC



ECHO-FT blood pressure monitor is a Home to Hospital bi-directional networking instrument. You can reserve memorized data on your personal computer then send them to your physician. If you monitor your blood pressure periodically and memorize reference for your physician, they will be a good information to enable your physician to optimize the treatment program and determine how much medication is required to you corresponding your circadian rhythm of blood pressure.

**NOTE** Must install an USB driver to use an USB port when connect a computer to an ECHO-FT. (Refer to 'Hour24')



To install an USB driver in a computer, follow the guidance contained in, manual of software 'Hour 24' Turn on the power of two appliances after connecting ECHO-FT to the computer running 'Hour 24' (USB cable should be used the one supplied by JAWON MEDICAL exclusively)

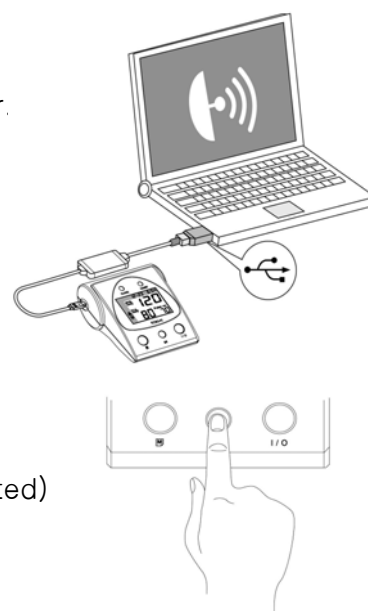
## 2. Data transmission

① Execute software 'Hour 24' in a personal computer.

② Connect USB cable to a computer and a port of ECHO- FT in order to transmit saved data.

③ Press only one time of [M] button of ECHO-FT.

④ Press a [📶] button to transmit to a computer.  
(All measurement data saved in memory is transmitted)

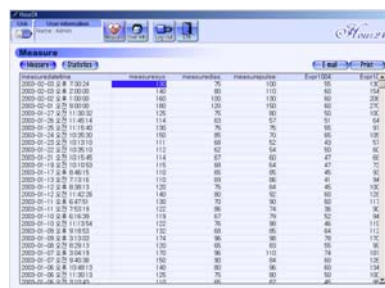


## 3. How to send the data to your doctor

**NOTE** 1. 'Hour24' is transmitted using Microsoft Outlook Express or anything else.  
2. Microsoft Outlook Express should be installed on user's computer to use Microsoft Outlook Express mail.

① Retrieve saved data in order to select the date and time in software 'Hour 24'.

② An 'E-mail' button will be on right upper side appeared at various measurement graphs and right upper side when a data to send.



③ A window to get input if click a 'E-mail' button opens. Input a mail address and title and click a 'Send E-mail' button.

(A save situation of a file is marked in E-mail title, and a transmitted figure file and blood pressure measurement file are saved in a computer of a user.  
( 'Hour24' manual reference )



**Ncte** Please transmit the data file which use a [SAVE] function of software 'Hour24' use personal mail, and to transmit, and was saved.  
Detailed contents refer to 'Hour 24' manual.

## MEASUREMENT

Remove thick or tight-fit clothes from your upper arm.

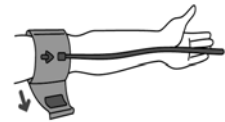
Sit on a chair with your feet flat on the floor and place your arm on a table so that the cuff can position as same level as your heart.

### 1. Wrapping the cuff

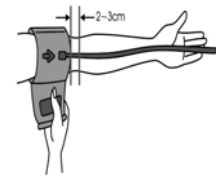
- ① Securely connect the air tube plug of the cuff to the jack of main unit.



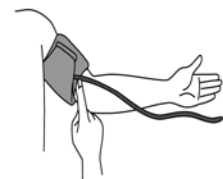
- ② Unfold the cuff as shown in the drawing.



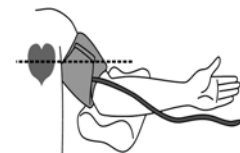
- ③ Wrap the cuff around your upper arm. Position the cuff hose over your brachial (forearm) artery and between your middle and ring fingers when it is extended.



- ④ Position the lower edge of the cuff is 1 ~ 1½ inches above the elbow joint as shown in the picture.



- ⑤ Strain the cuff with 2 fingers space between the cuff inner-liner and the arm.



- ⑥ Place your arm at the same level as the heart.

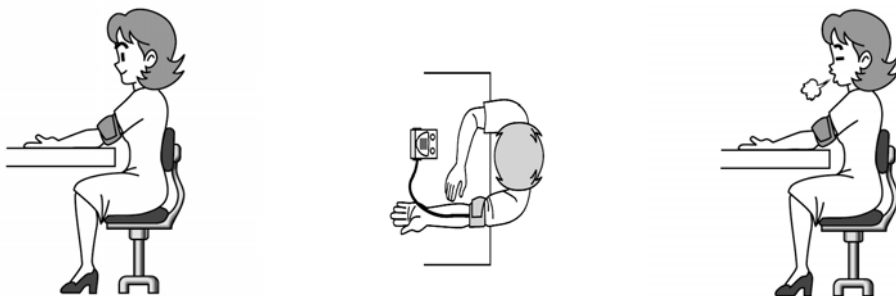
### Note

Take off thick coat, sweater or tight-fit clothes from the monitoring arm. If possible, wrap cuff with direct contact between inner-liner of it and the skin. When you roll up your sleeve, ensure it does not constrict the blood flow in your arm.



## 2. Correct measuring posture

- ① Please place your arm with the palm facing up on the table. When the table is too low for your arm to position the heart level, adjust the level off with a cushion, towel or a similar material.
- ② For monitoring, sit down comfortably on a chair with your feet flat on the floor and take deep breaths 5 to 6 times and relax.



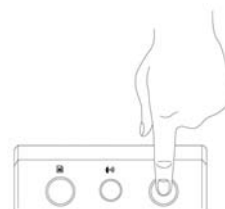
**Note** Sit comfortably on a chair with your feet flat on the floor and relax before monitoring starts. Monitoring should be taken in a quiet place.

## 3. Measuring method

- ① Press the I/O button

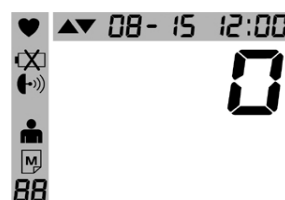
Wrap the cuff around your arm and press [I/O] button to start.

There will be a momentary full-segment display.

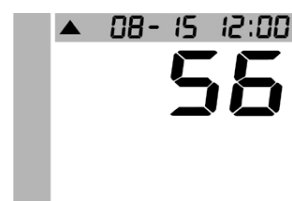


- ② Automatic pressurization

The LCD panel changes to the momentary screen displayed all symbol in LCD edge and [0] in main LCD.



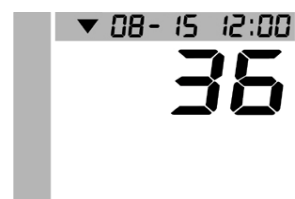
Then [▲] symbol remains on LCD panel coinciding with a start of pressurization. At this time the number to show the inflated cuff pressure will increase rapidly as a normal process and the cuff will tighten as air enters in it. The value of pressurizing is determined automatically. Do not move your arm and remain still until the entire measurement completed.



- Note**
1. When noise or movement including talking is sensed during pressurization, re-pressurization will be held automatically.
  2. If a higher inflation is needed in any circumstances, the device re-inflates the cuff up to 30~40mmHg higher

③ Monitoring is in progress

When the pressurizing is over, [▼] symbol appears and air is released from the cuff slowly. You can feel the cuff become less tight gradually.



④ Monitoring will start with deflation and if the pulse is sensed during deflation [♥] symbol appears and flashes.

- ⑤ When noise is detected during measurement, [👤] appears on its place on the screen. In case that you move or speak, [👤] is accompanied with a voice warning as “Don’t move or speak please.” But monitoring will be continued after a pause.



- ⑥ When Error occurs due to insufficient inflation, re-pressurization will be held automatically with a voice message as “Can’t measure. We will try again.”



⑦ Display the results

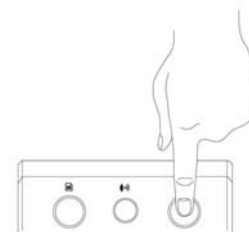
When monitoring is over, the value of systolic and diastolic blood pressure and pulse will be displayed



on LCD simultaneously, then the voice message comes out as “Your blood pressure is systolic 000, diastolic 000, pulse 00.” If the noise or movement has been detected during monitoring, voice message says also “There is movement during measuring.” and shows the [👤] in result view.

⑧ Switch off the power

To finish the measurement, press the I/O button and remove the cuff gently. The monitored reading will be stored automatically into the memory.



### Caution

1. During measurement, do not move your fingers, hand, or arm, and do not put them on stress.
2. If you want to stop measuring, press the I/O button. Pressurization will stop immediately and air will be exhausted rapidly, then the power will be turned off.

**Note** Even if you forget to press the I/O button, the power will be automatically turned off after 1 minutes.

## 4. Memorizing

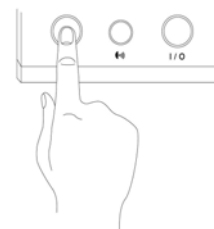
ECHO-FT has 64 reading memory capacities. When memorized readings are retrieved, they are displayed with monitoring date and time respectively. The reading detected noise or movement during measurement accompanies [👤].

### 1) Storing the readings

The readings are stored automatically when the monitoring is completed. When its memory capacity is fully occupied the last data replaces the oldest one.

### 2) How to retrieve the stored data

- ① Press the [M] button.
- ② The latest reading will be displayed on main



LCD and the number '01' appears in the memory number displaying part.

- ③ When the [M] button is pressed again the second latest reading will be displayed on LCD with the memory number '02'.



- ④ Further pressing of the [M] button, the data will be displayed respectively in reverse order from the latest one to oldest one with memory number increasing.



- Note**
1. Data saved in memory can be all deleted, exchange battery or remove an AC adapter
  2. Please insert battery in unit when use an AC adapter
  3. To completely eliminate saved data, take out battery and please press one time of [I/O] button.
  4. The memory capacity is subject to change for promotion.

## MAINTENANCE AND STORAGE

### 1. Maintaining

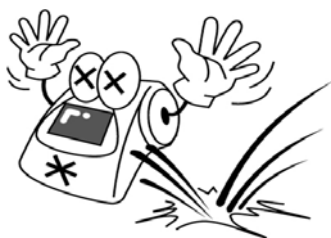
Avoid exposure to dust, direct sunlight, humidity and extreme changes in temperature.



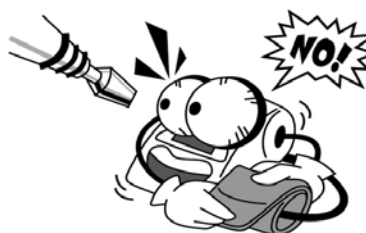
If this unit is not being used for a long period of time, please remove the batteries.



Do not drop the unit.



Do not disassemble the main body or the cuff.



Do not fold or bend the cuff forcibly.



Do not operate the unit without wrap the cuff around your arm.



### Note

Do not immerse the unit in water. The device exposed to foreign material and exceptional environment need to be check whether the device is functioning properly and safely before using

## 2. Cleaning

### 1) Main body

- ① When cleaning, use a soft cloth, slight moistened with water or a neutral detergent, then wipe it with a dry cloth. If the unit is contact with water in outer case, dry it immediately with a soft lint-free cloth.
- ② Do not use abrasive or corrosive cleaning agent, thinner, alcohol, benzene or similar solvents which might damage the device.
- ③ It is recommended to clean the unit monthly.



### 2) Cuff

Do not wash or dip the cuff in the water.



## TROUBLE SHOOTING

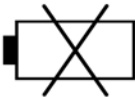
### 1. Against Error

ERROR	CAUSE	SOLUTION
Err 0	<ul style="list-style-type: none"> <li>* When inflation level is not sufficient.</li> <li>* When air hose is not connected well.</li> <li>* When air leaks from the cuff.</li> <li>* When battery power is low.</li> </ul>	<ul style="list-style-type: none"> <li>* Please set higher inflation Level.</li> <li>* Check if there is any 'CAUSE'.</li> <li>* After settle it, monitor again.</li> </ul>
Err 1	<ul style="list-style-type: none"> <li>* When a cuff is not connected to a monitor.</li> <li>*When a cuff is positioned incorrectly</li> </ul>	<ul style="list-style-type: none"> <li>* Please check if the cuff is connected well to the unit and monitor again.</li> </ul>
Err 2	<ul style="list-style-type: none"> <li>* When the pressurization is over than 300mmHg.</li> </ul>	<ul style="list-style-type: none"> <li>* Please turn the power off then on and monitor again.</li> </ul>
Err 3	<ul style="list-style-type: none"> <li>* When monitoring is carried out the wrong way.</li> <li>* When a read data is not output as a result of noise or movement detected.</li> </ul>	<ul style="list-style-type: none"> <li>* Please read 'wrapping the cuff' and 'correct measuring posture' in 'Measurement' part. (page 18~19)</li> <li>*Monitor again following the way instructed.</li> </ul>
Err 4	<ul style="list-style-type: none"> <li>* When moving or speaking is sensed during monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>* Please do not move or speak during monitoring.</li> </ul>
Err 5	<ul style="list-style-type: none"> <li>*When battery is not fixed well.</li> <li>*When the polarities are positioned incorrectly.</li> </ul>	<ul style="list-style-type: none"> <li>*Check if the polarities of the batteries are positioned correctly.</li> <li>*After disconnecting batteries in unit and press [I/O] button, then replace them.</li> </ul>

※ If any error continues, call its service center.

## TROUBLE SHOOTING

### 2. Against trouble

SYMPTOM	CAUSE	COUNTERMEASURE
	<p>The battery power is low. (When batteries are exhausted completely, the mark does not appear on the LCD any more.)</p>	<p>Replace all four "AA" type batteries at the same time. Before change, transmit the data to your computer first.</p>
<p>The blood pressure value seems too high or low.</p>	<p>High: When your arm positioned lower than your heart during monitoring. Low : When your arm positioned higher than your heart during monitoring.</p>	<p>Make sure that your arm position at the same level as your heart, then monitor again.</p>
<p>Re-pressurization</p>	<p>In case of insufficient inflation. The movement of the arm or body during inflation is sensed. (In case of excessive hypertension or a feeble pulse, it is possible to occur re-pressurization over 2 times.)</p>	<p>Relax for a few minutes then monitor it again with correct posture. Do not move during monitoring.</p>
<p>The unit does not start monitor again after error occurs.</p>	<p>The cuff may not be worn the cuff or positioned incorrectly.</p>	<p>Monitor again after wearing the cuff correctly and positioning your arm as your heart level.</p>



## WARRANTY

### **1. Manufacturer's limited warranty**

The warranty and remedy provided herein are exclusive and in lieu of all other express warranties and unless stated herein, any statements or representations made by any other person or entity are void.

Neither the manufacturer, distributor nor their affiliates shall be liable for any loss, inconvenience, injury, or damage including direct, special, incidental, or consequential damages resulting from the use or inability to use this product, whether arising out of any breach of this warranty or any other legal theory. All express and implied warranties, including the warranties of merchantability, are limited to the applicable warranty period set forth above.

Manufacturer and distributor assume no responsibility for damages or penalties incurred resulting from the use of this product in a manner or location other than that for which it is intended.

Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Should your product prove defective during this warranty period, please return the product in the original carton to your place of purchase for warranty service.

### **2. Warranty steps**

Should you experience any technical problems with your product, please follow the steps below :

- ① Re-read "Wrapping of the cuff" and "Measuring method" portion of the instructions carefully, then take a measurement again. If the problems persist, your product may be defective. If you believe the product defective, follow this warranty steps ② or ③ below.
- ② Manufacturer, at its option, will repair or replace your product (with a same or a comparable model) with new or rebuilt parts, free of charge within one year from the date of original purchase in the event of a defect in materials or workmanship. This warranty is extended only to the original purchaser. A

purchase receipt or other proof of date of original purchase will be required before warranty performance is rendered.

- ③ This warranty only covers failures due to defects in materials or workmanship which occur during normal use and does not cover normal wear of the product. This warranty is void if the product housing has been removed, if the manufacturer's label, logo, or serial number have been removed, or should the product fail to function properly as a result from accident, misuse, abuse, neglect, mishandling, misapplication, defective batteries, faulty installation, set-up and adjustments, improper maintenance, alteration, maladjustment of controls, modification, power surges, commercial use of the product, or service by anyone other than an authorized service center, or acts beyond Manufacturer's control.

### **3. Where applying for solving problem**

Should you be dissatisfied with the service you received from your retailer, please write

**JAWON MEDICAL CO.,LTD.**

• **Seoul office**

Tel : \*82-2-587-4056

Fax : \*82-2-588-1937

• **Factory**

13 Lot, 21 Block

Jinryang Industrial Complex, Kyungsan-city

Kyungsangbuk-do 712-830, R.O.Korea

Tel : \*82-53-856-0993

Fax : \*82-53-856-0995

Include in your correspondence the following information, clearly printed

- (i) Your name and street address
- (ii) Daytime telephone number
- (iii) A detailed description of the problem
- (iv) A copy of your dated proof of purchase or bill of sale

## SPECIFICATION

Model	ECHO-FT
Method of Measuring	Oscillometric
Method of indicating	Digital
Pressurizing Method	PWM(Pulse Width Modulation)
Range of Measuring	Blood Pressure : 30 ~ 280mmHg Pulse Rate : 40 ~ 200beats/min
Accuracy	Pressure : within $\pm 2$ mmHg or $\pm 2\%$ Pulse Rate : within $\pm 5\%$
Memory	64 Reading Memory
Resolving Power	1mmHg
Automation Shut-off System	Performs approximately 1 minutes after measurement.
Power	DC 6V(AA type 1.5V x 4), AC adaptor compatible
Operating Environment	Temperature : 10°C to 40°C Humidity : 30 ~ 75% RH, non condensing
Storage Environment	Temperature : -20°C to 60°C Humidity : less than 95% RH, non condensing
Dimension	102.0(W) X 133.0(D) X 63.2(H) mm
Weight	Approx. 500g (Including cuff & batteries)
Pressure Mode	Fuzzy logic Automatic inflation

◆ Specifications are subject to change without notice.

- \* Life of battery can be reduced according to environment.
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# ECH FT HD3



CE FC EN ISO 13488  
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