

FT-500(R/L) FULLY AUTOMATED BLOOD PRESSURE MONITOR OWNER'S MANUAL

- ONE TOUCH operation
- WIDE LED display
- QUICK measure
- HIGH accuracy
- THERMAL HIGH SPEED printer
- VOICE message
- CARD using



JAWON
MEDICAL CO., LTD.

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INTRODUCTION

We highly appreciate you choose this JAWON product.

You are kindly requested to be familiar with these directions before using this product and always keep it together with the product. In case you are not clear about any directions or problems arising while using the product, please contact our service center.

We will provide you with detailed instructions.

1. INTRODUCTION

FT-500 (R/L) is a state-of-the-art medical equipment that can check not only blood pressure and the pulse rate but also Pressure Rate Product (PRP - an important index for the oxygen consumption of cardiac muscle) through a single process.

This machine will help to provide upgraded medical services for the patients since more accurate and reliable diagnosis is collected and suitable treatments can be arranged on the basis of these measured results.

FT-500 (R/L) is the fully automated blood pressure monitor armed with the belt-type cuff that facilitates the test time quicker and provides the results more reliable.

2. WORD DEFINITIONS

To ensure safe operation and long term performance stability, it is essential that you fully understand the functions, operating and maintenance instructions by reading this manual before operating your 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.

WARNING

Important information to indicate the presence of a hazard which can cause severe personal injury, death of substantial property damage if the warning is ignored.

CAUTION

Important information to indicate the presence of a hazard which will or can cause minor personal injury or property damage if the warning is ignored.

NOTE

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

3. CLASSIFICATION AND COMPLIANCE

- 1) FT-500(R/L) is classified as ;
 - Class 1 type-BF against electric shock
 - Ordinary equipment without protection against ingress of water
 - Equipment not suitable for use in presence of a flammable anesthetic mixture by standard of IEC 60601-1(Safety of Medical Electrical Equipment)
- 2) FT-500(R/L) are complied with Class A for Noise-Emission, Level B for Noise-immunity, by standard of IEC 60601-1-2(Electromagnetic Compatibility Requirements).
- 3) This blood pressure meter complies with the EN 1060-1 : 1995 Non-invasive Sphygmomanometers general requirements as well as EN 1060-3 : 1997 supplementary requirements for electro-mechanical blood pressure measuring systems.

4. SAFETY PRECAUTIONS

FT-500(R/L) is designed and manufactured with consideration given to the safety of the operator and subject and also to the reliability of the unit.

The following precautions must be observed for additional safety ;

- 1) The unit must be operated only by, or under supervision of, a qualified person by JAWON or his distributor.
- 2) FT series are specified as Class 1 type BF unit under the standard of IEC 60601-1(Safety of Medical Electrical Equipment).

Therefore, patients must not touch or handle inner side of the system at any time.
- 3) Do not modify the unit. If any modification is desired, ask JAWON or its authorized dealer for service.
- 4) The unit has been factory-adjusted for optimum performance.

Do not attempt to adjust any pre-controls or switches except those specified in this manual for operation.
- 5) If you have experienced any trouble with the unit, switch it off immediately, and contact JAWON or its authorized dealer for assistance.
- 6) If you plan to connect any device of other manufacturers electrically or mechanically to this unit, contact JAWON or its authorized dealer for instructions before doing so.

When you connect computer or other system to the unit(RS-232C), the attached systems should be certified by IEC 950 or equivalent standards for data processing equipment. Configurations shall comply with the system standard IEC60601-1-1.
Everybody who connects additional equipment to the signal input part or signal output part configures a medical system standard IEC 60601-1-1.
If in doubt, consult the A/S department of local distributor.

7) Avoid the following environments for storage ;

- Where the ambient temperature falls -5°C or exceeds 50°C .
- Where the atmospheric pressure falls below $70\text{ kPa}(700\text{ mbar})$ or exceeds 106kPa (1060 mbar).
- Where the humidity is over 85% non-condensing.
- 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 exceeds 10 degrees.
- Where the AC power line voltage heavily fluctuates
- Where the AC power line voltage changes heavily when this unit is in operation.
- Where the unit is exposed to direct sunlight.

Caution

Measurements may be impaired if this device is used near televisions, microwave ovens, X-ray equipment or other devices with strong electrical fields. To prevent such interference, use the meter at a sufficient distance from such devices or turn them off.

Note

Incorrect operation or failure of user to maintain the unit relieves the manufacturer or his agent of the system's non-compliance with specifications or responsibility for any damage or injury.

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 problem. You should not use this information contained product for diagnosis or treatment of health problem or prescription of medication by yourself.

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

Defective unit or accessories, must be packed in the replacement cartons, are shipped off from you to JAWON MEDICAL CO.,LTD.

Shipping and insurance costs for return of defective unit must be prepaid by you.

5. SAFETY SYMBOLS

The International Electrotechnical Commission(IEC) has established a set of symbols for medical electrical equipment which classifies a connection or warning of any potential hazard. The classifications and symbols are shown below. Save these instructions for your safety.



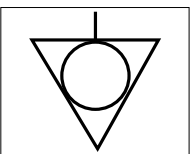
Isolated patient connection (IEC 60601-1 Type BF)



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

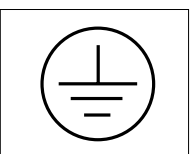


I and O on power switch represent ON and OFF, respectively

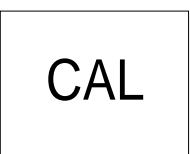


Identifies equipotential ground(located next to ground stud on rear panel)
(IEC 417-5021)

► The following symbols are used inside the system :



Identifies the point where the safety ground of the system is fastened to the chassis



Do not open. This is for factory only

TERMS OF EACH PART AND FUNCTIONS

1. FRONT PART

① START BUTTON

Press START button after ready to measure, the cuff will be wrapped automatically and begins to pressurize.

② STOP BUTTON

Press STOP button if you want to stop it during measurement. Pressurizing will stop and the air will exhaust from the cuff.

③ SYSTOLIC DISPLAY

It indicates systolic blood pressure values.

④ DIASTOLIC DISPLAY

It indicates diastolic blood pressure values.

⑤ PULSE DISPLAY

It indicates pulse rate.

⑥ TIMER

It indicates time.

⑦ EMERGENCY STOP BUTTON

When your arm is oppressed due to high pressurizing or irregular operation is done, press this button then the cuff will be exhausted rapidly

⑧ PRINTER COVER

It protects the printer.

⑨ AUTOMATIC CUTTER(Printer paper let-out slot)

Printing paper is automatically cut off to let it out through the slot.

⑩ CUFF

It wraps and releases the arm automatically for measurement.

⑪ ARM REST

When the arm is placed on the cuff, the arm supporter sustains the arm and makes the right position.

⑫ HUMAN SENSOR

A melody is tuned up, when person comes near by.

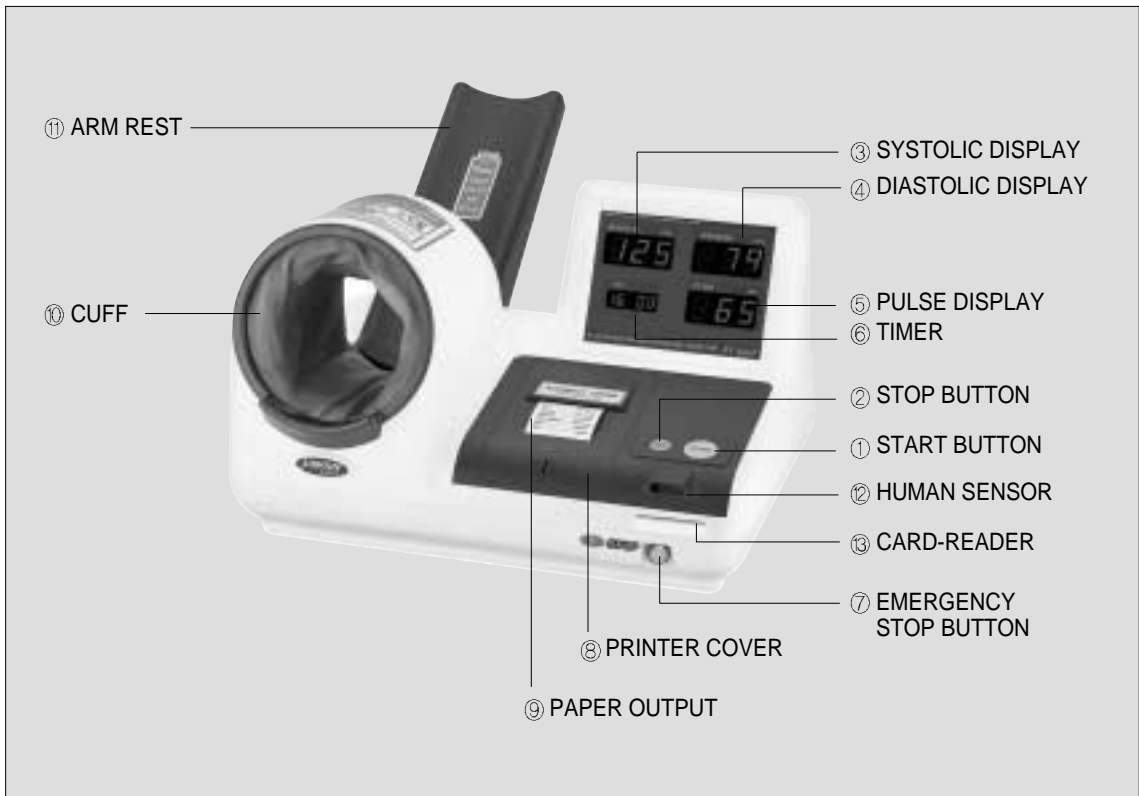
⑬ CARD-READER

When the card is inserted, it reads ID NO. in it and stores the measured results.

Note

The cuff and the buttons(START and STOP button) of FT-500 are located at reverse side by R and L type.

FRONT PART



Note

Printer, card reader and human sensor are optional. ID buttons are only attached to FT-750AF (R/L) model. ID card can be issued either by the machine manager or by the manufacturer of the model, The card can store ID number and measured results. The card stores two previous measured results and can contain three measured results with the current one altogether. When the model manager writes the card, please refer to the manual and specifications for operation and programs attached to the card writing device at the time of purchase.

2. PRINTER

① PRINT button

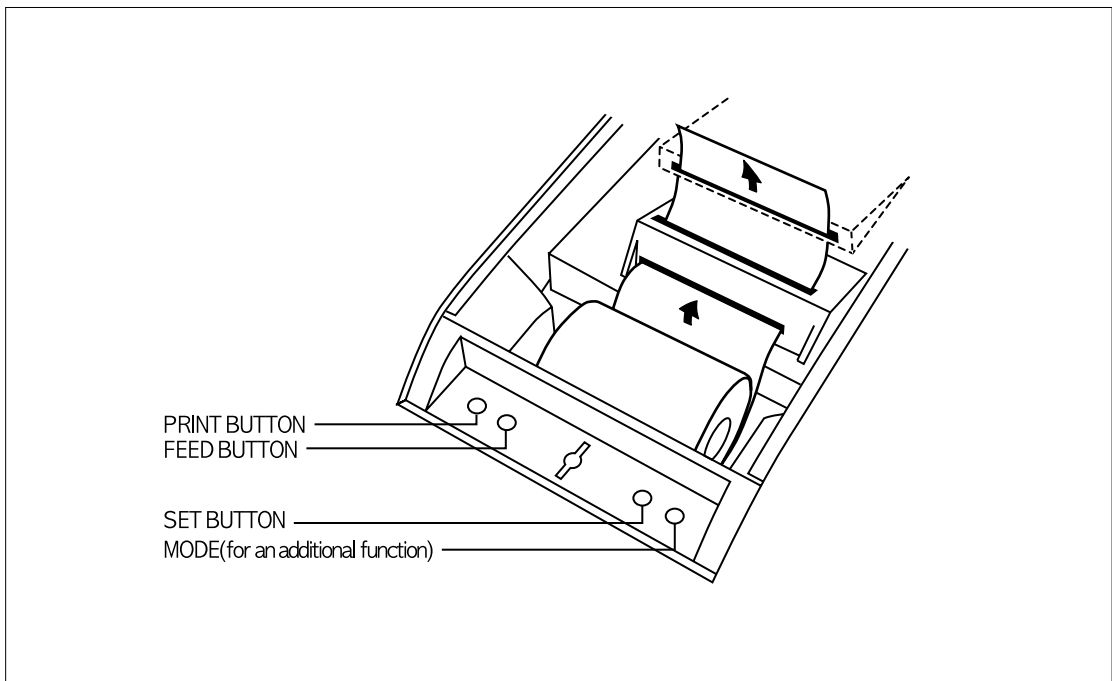
- Use it when you print out the data.
- If you set 「ON」 at the rear (PRINT ON/OFF switch), the data is printed automatically even you do not press PRINT button.
- Normally, when you press this button, all measured data after you turn the power on will be printed.(if you turn it off, all memorized data would be deleted.)
- When you set the date and time, use as a key which increases the number.

② FEED button

- Use this button for setting the paper.
- When you set the date and time, use as a key which decreases the number.

③ SET button

- set the date and time
- The functions are as follows when press this before or after measurement.(It does not work during measurement)
- Sequence is HOUR → MIN. → MON. → DAY → YEAR
- Within 5seconds, finish set of the date and time.
- See the page '15' for detailed method



3. REAR PART

① POWER

It is to turn the power on and off

② AC INPUT

It is to connect with the power cord

③ FUSE

Two fuses(250V/1.6A) are installed to prevent overload.

④ CAL

This is only for inspection. Never open it.

⑤ EARTH(POTENTIAL EQUALIZATION TERMINAL)

Please make sure for safety

⑥ COMMUNICATION PORTS(RS-232C)

Two ports are fixed, first for connecting between the main body and a computer or other equipment with cable(RS-232C) to transfer the data collected or measured, second for connecting between the main body and the coin slot with RS-232C cable to transfer the data

⑦ SENSOR ON/OFF

Human sensor is turned on and off with the switch.

⑧ SOUND ON/OFF

Music and voice output functions are activated with the switch placed to 「ON」, and vice versa.

⑨ CARD ON/OFF

ID card is usable when the switch is placed to 「ON」, and vice versa.

⑩ PRINT ON/OFF

Test results are printed out when switched to 「ON」, and vice versa.

⑪ VOLUME (ANNOUNCE ON/OFF)

It regulates volume output when switch is at 「ON」 while all volume is out at 「OFF」.

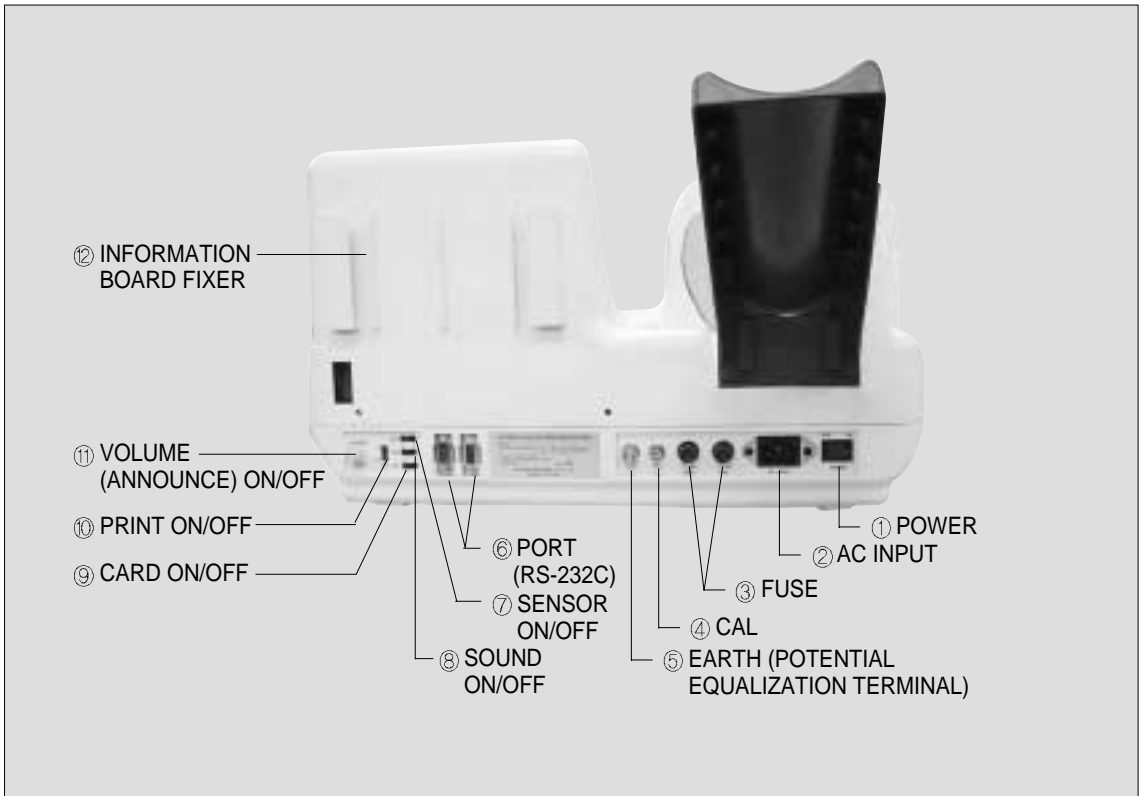
⑫ INFORMATION BOARD FIXER

Fix the information board here

Note

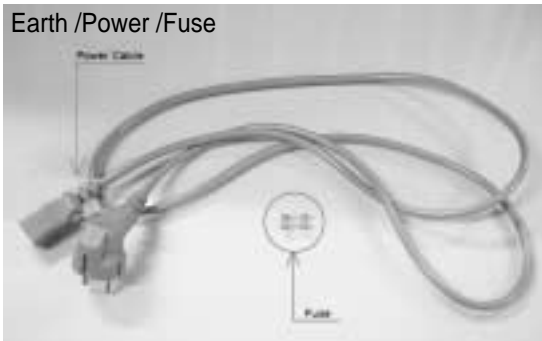
While sound switch is activated on (so sound is functioning), place the VOLUME ON/OFF switch to 「OFF」 for deactivation of voice message and music play.

REAR PART

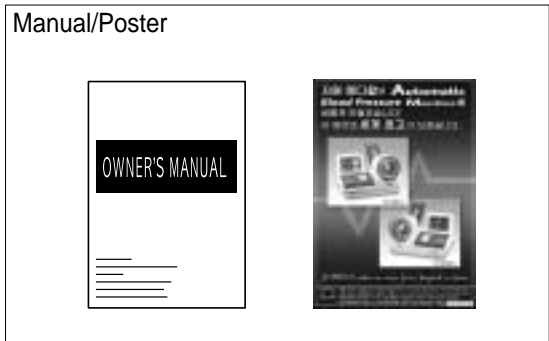


4. ACCESSORIES

Earth /Power /Fuse



Manual/Poster



Guide



Arm rest



5. OPTIONS

Cart/ Chair



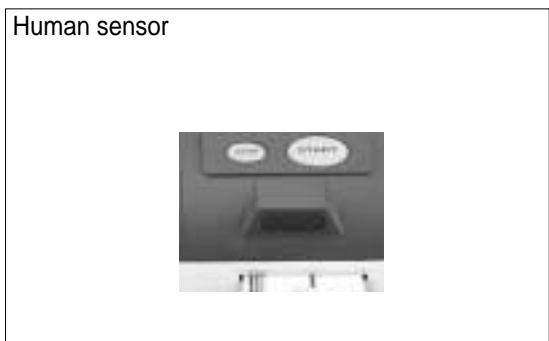
Card-reader/ Card writing device/Cards



Printer paper/Printer



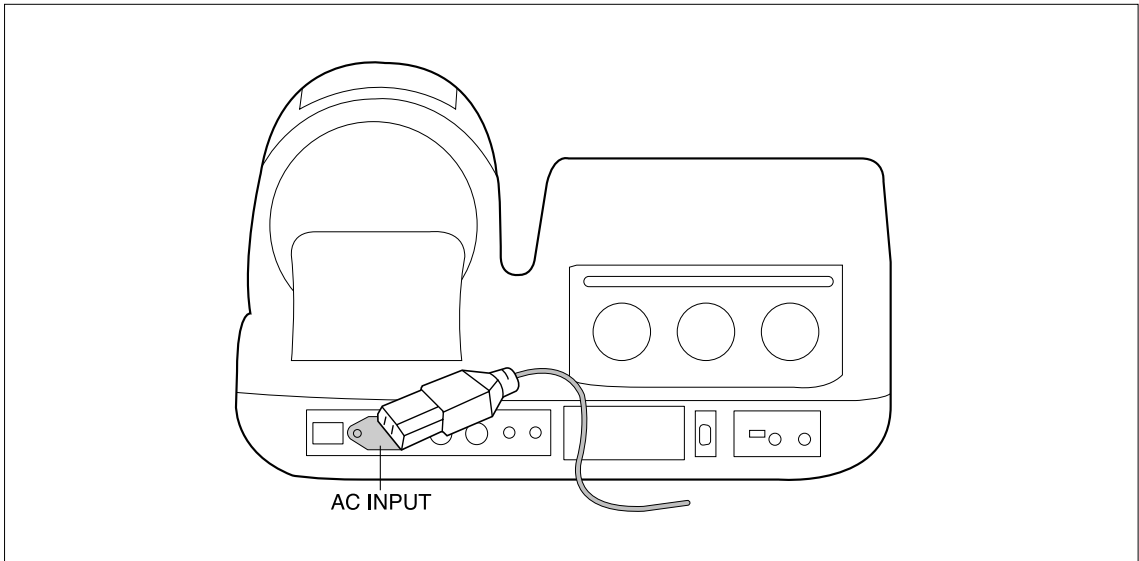
Human sensor



INSTALLATION

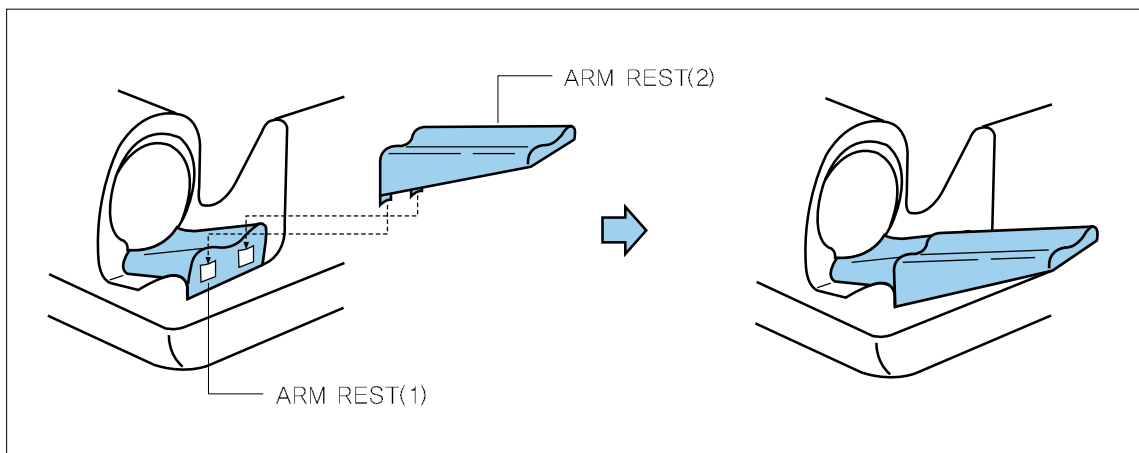
1. CONNECTING POWER CABLE(AC INPUT)

Just connect the power cable to the AC INPUT slot on the rear and turn the POWER ON/OFF switch(O/I) on the lower part of the rear(See the picture).



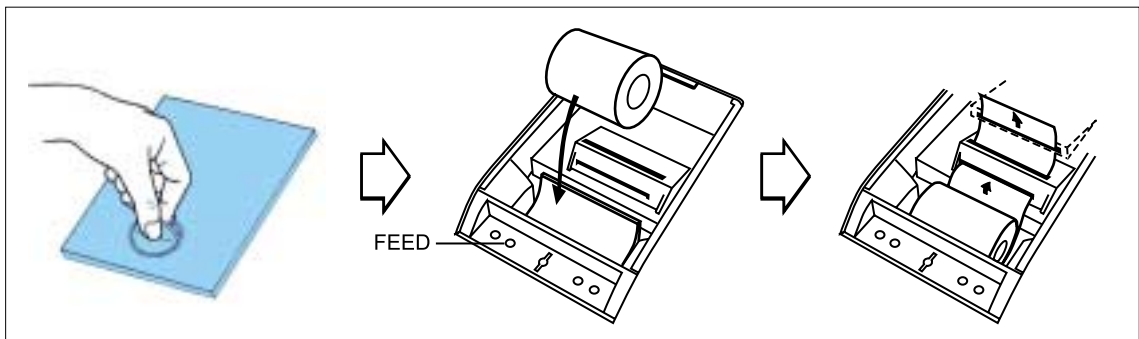
2. ASSEMBLING OF ARM REST

The arm rest is divided into two parts, the first one is built-in the unit as it is packed in factory. For assembling, fit the other to the one as below (See the picture)



3. LOADING THE PRINT PAPER

- ① Check and see if power is turned on.
- ② Turn the nut(with a driver on the groove in the middle) on the lower printer cover clockwise to 90 degrees and open the cover.
- ③ Load the print paper as shown in the picture.
- ④ Insert the paper edge deep under the black roll, then it comes out above the CUTTER.
- ⑤ Balance the paper in the right place.
- ⑥ Cut the paper by pressing the FEED button.
- ⑦ Close the cover and turn the nut counterclockwise back.



Note

Being thermal type, printing is photocopied on one side of the paper(slippery side), without using printing ink.

Please check remainder of the paper always and then replace it.

Please use exclusive paper (58mm).

Keep paper rolls in a dark and ventilated place.

Avoid any dust etc. on the paper.

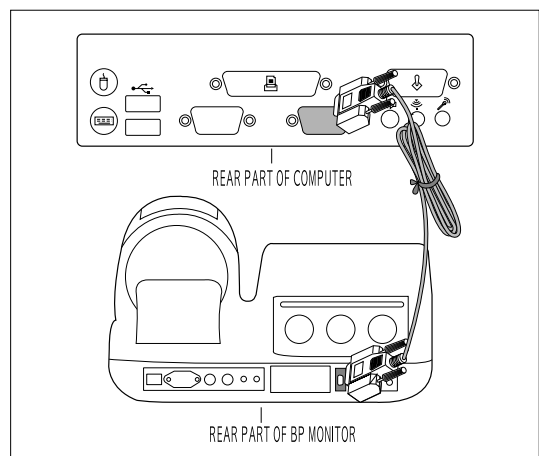
Do not pull the paper during printing. It could cause jam.

When printing paper is not loaded in correct place, it may cause the malfunction of the printer or paper will be shoved out.

4. CONNECTING PORTS(RS-232C)

To transmit the data with connecting a computer or other external options to the unit.

Connect the RS-232C cable both to port of the unit and to the computer jack or other external options(See the picture)



5. SETTING TIME AND DATE

- ① Turn ON the unit
- ② Open the printer cover.
- ③ Sequence is HOUR → MINUTE → MONTH → DAY → YEAR

HOUR

- ① Press SET button, then indicator says its counts that have been measured since keeping button ON.
- ② Press SET button one more. First 2 figures will blink.
- ③ To set the current hour, press PRINT button to make the number goes up or press FEED button to make the number goes down.



MINUTE

- ① After setting the hour, press SET button again.
- ② In this time, last 2 figures will blink.
- ③ As the same way as above, set the current minute with PRINT and FEED button.



MONTH

- ① After setting the minute, press SET button again.
- ② First 2 figures will blink.
- ③ Set the current month with PRINT and FEED button.



DAY

- ① After setting the month, press SET button again.
- ② Last 2 figures will blink.
- ③ Set the current day with PRINT and FEED button.



YEAR

- ① After setting the day, press SET button again
- ② First 2 figures will blink.
- ③ Set the current year with PRINT and FEED button.



Note

If you want to measure blood pressure during setting the date and time, press STOP button. Then you can measure immediately.

Note

You should set all data at once (hour, min, month, date and year). In case of stopping setting, the values return to previous ones which you have done before. The calendar and time functions work without plugging power cord in. Calendar program is inputted for 100 years, and it will be adjusted automatically even at a leap year.

MEASUREMENT

1. CAUTIONS FOR MEASUREMENT

Take off heavy sweater or shirts.



Before measurement, take it easy and have a rest for a while.



Do not chat or move while you are being measured.



Do not measure in bad positions such as standing, half seat or sitting with your legs crossed.



When you fold your sleeves up, please make sure not to press your arm.



Put your arm deeply in order to fit to the arm rest.



If it is not easy to check your pulse with the stethoscope, the measurement cannot go on.



If you strain your arm, there will be some differences. Please relax your arm and have a seat correctly.



2. MEASUREMENT

- ① Check the voltage and turn the power on



- ② With the switch-on, a music sound flows as the LED screen is activated
But, the SOUND ON/OFF switch in the rear of the unit should be set as 「ON」



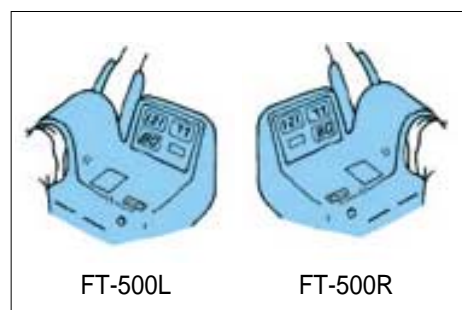
- ③ For the card users, proceed with checking after entering the card into the card-reader.
When the card is inserted, a voice message comes out to “press the start button”



Note

the CARD ON/OFF switch in the rear of the unit should be set as 「ON」
if the card is damaged or expired, the voice message comes out as “Can not use ID card.” In this case, purchase new one and try again.

- ④ Put your right or left arm into the cuff deeply. For FT-500R, measure with right arm, for FT-500L, measure with left arm.



Note

An optimal arm circumference for this equipment is 9” to 14”

Note

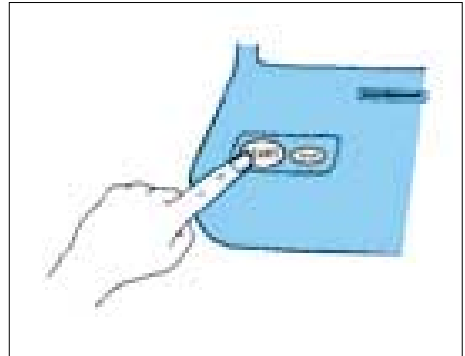
Check the blood pressure with the right arm with FT-500R and the left arm with FT-500L. Place your arm on the arm supporter with the palm facing up through the cuff deeply. Adjust the height of the chair so that the arm is levelled off with the heart. when the arm is placed lower than the heart, blood pressure will become higher than actual value, and vice versa.



- ⑤ Press start button and then the cuff is automatically inflated and the measurement is started.

Note

When the measurement is started, the voice message is announced as “Starting measurement, don’t move or speak please”. When you feel painful and want to stop the measurement, press STOP button.



- ⑥ When the measurement completed, the cuff is automatically deflated and it returns to normal condition. Simultaneously, the voice message is announced as “Measurement completed, pull your arm out please. Thank you.”



Note

When checking is not satisfactory, the voice message comes out as “Can not measure, we will try again.” At this time, let the arm stay into the cuff and start over again from the beginning.



-
- ⑦ Blood pressure and pulse rate are displayed on LED and then the results are printed out. Also the results are informed by the voice message as “Your BLOOD PRESSURE is, SYSTOLIC 000, DIASTOLIC 000, PULSE 000.”



- ⑧ Pull your arm out.

Note

When the PRINT ON/OFF switch on the rear is set as 「OFF」, the result will not be printed even if the measurement is completed.

Note

For the card users, two previous results stored in the card can be recalled to compare with the current ones newly checked. Three results altogether could be printed out.

3. DATA ON MEASUREMENT BY PRINTER

Results on printer paper

ID-NO	0001
DATE	02/15/2002
TIME	16:50
SYSTOLIC	122mmHg
DIASTOLIC	077mmHg
MEANPRESS	089mmHg
PULSE	080bpm
P.R.P	9760

Normal Range

SYSTOLIC : below 139mmHg
DIASTOLIC : below 89mmHg
MEANPRESS : 74~106mmHg
PULSE : 60~100beats/minute
PRP(Pressure Rate Product) : 7000~12000
Related with myocardial oxygen consumption

Note

The results of MEANPRESS and P.R.P are not displayed on LED, but printed out on the paper.

Note

- When pressure is high with the jammed air hose, message appears on the printer as ERROR PRESSURE.
When the message is repeated, call for maintenance service.
- When pressure is low as air leaks, message appears on the printer as ERROR CUFF.
When the message is repeated, call for maintenance service.
- When a testee moves or speaks while in testing, message appears on the printer as ERROR MEASURE.
Try to re-test after for a while. If the message is repeated, call for maintenance service.
- A buzzer goes off once when error takes place, then the machine is ready for testing
When the machine does not work altogether, turn the power off. And then make sure if there is the fuse inserted and turn the power on and off a few times.

MAINTENANCE

To ensure safe operation and long term performance stability, it is essential that you follow this maintenance instruction all the time.

The performance test should be done every 2 years to ensure that the device operates properly and safely at all times. It can be performed either by the manufacturer or by an authorized dealer according to the regulations governing manufacturing of medical products.

1. REPLACING THE CUFF COVER

Remove the old cuff cover as follow;

- ① Remove the rubber molding which is located in the front of the arm insertion part.
- ② Press the start button, then the cuff will be wrapped.

When the cuff is wrapped approximately half, turn the power off.

The cuff cover will be strained.

- ③ Detach the cuff cover from the magic tape.
(The location of the magic tape is as the picture.)
- ④ Pull the upper part of the cover down direction, and then pull out the ring of it very gently.
- ⑤ Turn the power on again, then the cuff will return the original status.
- ⑥ Pull out the rear ring.
- ⑦ Remove the old cuff cover completely.



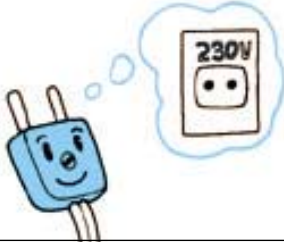
Replace the new cuff cover as follow;

- ① Place the new one through the arm insertion part. At this time, the large ring is for front, and the small ring for rear. (The sewed part of the cover should be placed bottom.)
- ② Press the start button and turn the power off again for half wrapping of the cuff.
- ③ Push the cover's rings into the body.
- ④ Attach the cuff to the magic tape with pressing.
- ⑤ Fix the rubber molding like the beginning.

Note

If the cuff cover is not placed properly, it may cause problems in operation.

This unit is for 230V. If you want 110V, please contact to a service center.



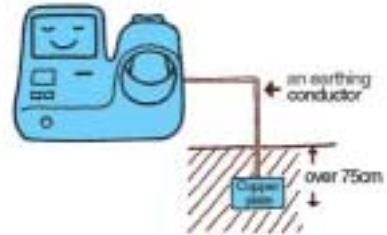
Remind the permitted current(50VA).



Do not disassemble the main body.



To prevent electric shock, please make sure the earth.



When grounded, do not mount it close to the gas pipe, water pipe, lightning rod and connection of telephone.



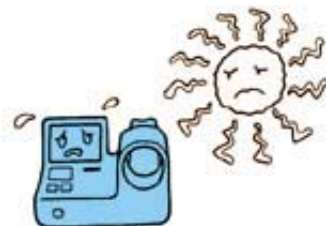
When you take out the plug, grasp the plug exactly.



Keep the unit dry and do not wet it. Never immerse the main unit in the water. It could cause damage the electronic parts inside.



Avoid direct sunshine, humidity, dust and extreme changes in temperature.



Do not put heavy things on the unit.



Wipe the unit with a damp cloth. Do not use benzine, alcohol or liquid similar to solvents and wet cloth.



Check the unit conditions occasionally.



Do not use the unit under the condition of shock or vibration.



Do not install and shock with chemicals or gas.



When you re-use after a long time, please check the unit carefully.



When some problems are found, please call our service center.



Note

When the cuff cover is dirty, wash it in the warm water with neutral detergent. If it worn out, replace with a new one. (Refer to "Replacing the cuff cover" on page 21)

When you sterilize the cuff, please use EO GAS sterilizer every 2 years.

AFTER SERVICE

1. AFTER SERVICE

If there is any problem with the unit, please follow the steps below ;

- ※ Contact the JAWON Overseas Service Department immediately.
After gathering the model name, Serial Number, date of purchase and description of the problem, contact JAWON with information shown below.
- ※ Try to solve the problem over the phone with the local service department personnel.
If the problem cannot be solved over the phone, just return to service department directly.
- ※ JAWON or local distributor will make available on request circuit diagrams, component part list, descriptions, calibration or other information which will assist your appropriately qualified technical personnel to repair those parts of unit which are designated by JAWON as repairable.

How to contact JAWON MEDICAL CO., LTD.

Write us at :

JAWON MEDICAL CO., LTD”

SEOUL OFFICE

JEONGJU BLDG 7F, 1451-38, SEOCHO-DONG, SEOCHO-KU, SEOUL, KOREA

TEL : 82-2-587-4056

FAX : 82-2-588-1937

FACTORY

13 LOT, 21 BLOCK JINRYANG INDUSTRIAL COMPLEX, KYUNGSAN CITY,
KYUNGSANG BUKDO 712-830 KOREA

TEL : 82-53-856-0993

FAX : 82-53-856-0995

(You can also contact the following representative or your local distributor)

2. PACKING AND TRANSPORT

JAWON follows his packing ways to protect any impact during transporting etc. So please do not transport or move the unit without JAWON' s packing condition as your wishes.

The normal storage environment ; - 5℃ ~ + 50℃ of temperature, Humidity is less than 85% non-condensing.

SPECIFICATION

Model	FT-500L	FT-500R
Display mode	LED display	
Measuring ranges	Pressure : 30 ~ 300mmHg, Pulse : 30 ~ 200beats/minute	
Accuracy	Pressure : ± 2 mmHg, Pulse : $\pm 5\%$	
Resolving Power	1mmHg	
Pressurizing method	DC Motor	
Cuff	Belt type	
Pressurizing time	Approx. 10seconds	
Measuring time	Approx. 33seconds	
Measuring method	Oscillometric	
Printer	Thermal high-speed printer	
Power supply	230V~/50Hz(EC), AC120V/60Hz(US)	
Power consumption	50VA	
Ambience for operation	Temperature : 10~40°C, Humidity : Less than 85% non-condensing	
Ambience for storage	Temperature : -5~50°C, Humidity : Less than 85% non-condensing	
Data transmission	RS-232C	
Dimensions	480(W) × 310(D) × 290(H)mm	
Weight	Approx. 11kg	
Measuring parts	FT-500L : with left arm	FT-500R : with right arm

Note

1. It is convenient and useful, if you purchase a cart and a chair for FT series.
Those are designed only for FT series so that can be placed anywhere.
2. An external appearance and specifications are subject to change without notice.

WARRANTY

WARRANTY

Item	Automatic Blood Pressure Monitor	Warranty period
Model	FT-500(R/L)	1 year (main unit only)
Serial NO.		

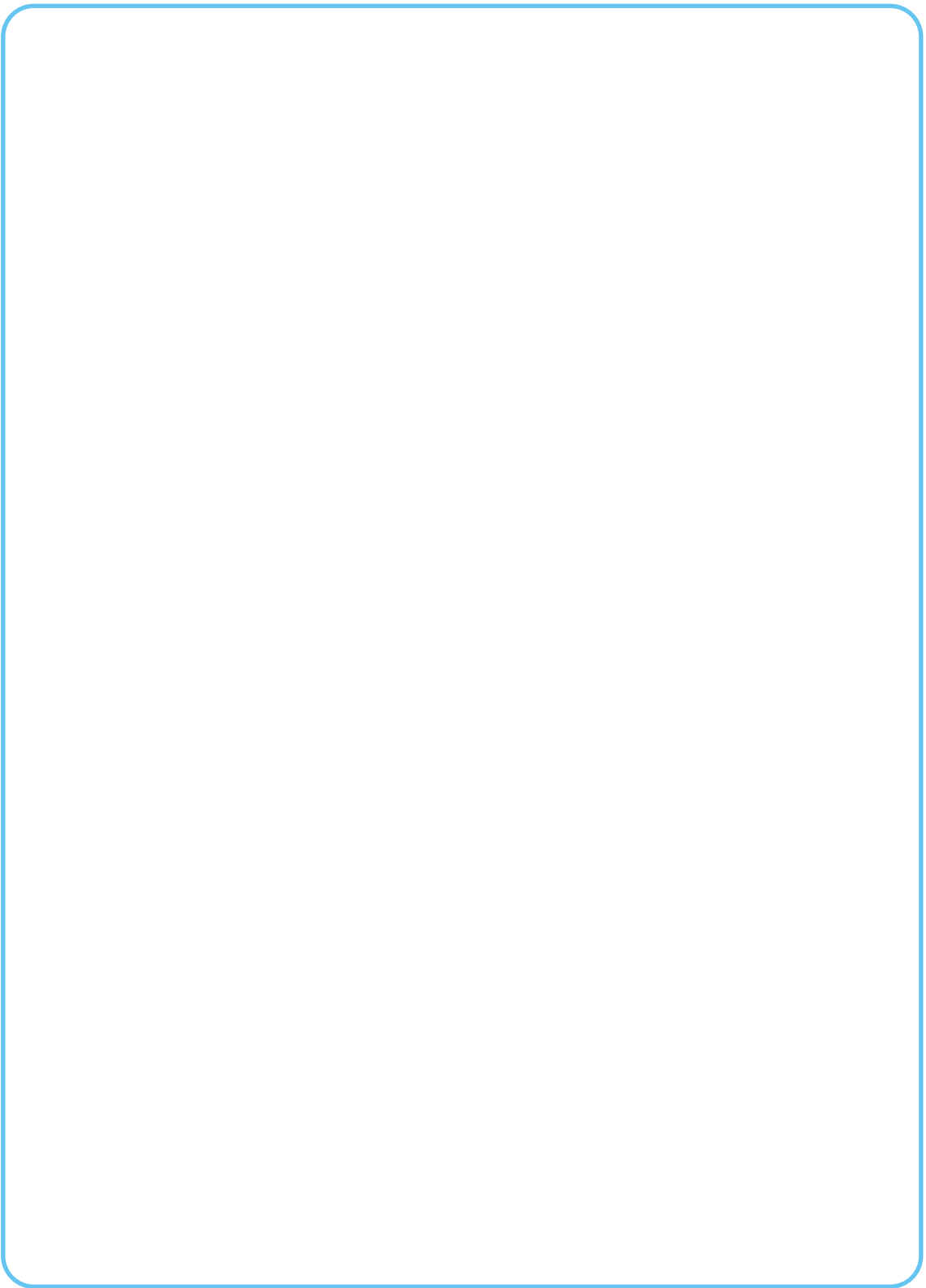
Date of purchase	Month	Day	Year
Customer	Name:		TEL:
	Address:		
Dealer	Name:		TEL:
	Address:		

Date	Defection	Confirmation

Note

- When you receive this warranty, make sure that the name of the dealer and the month, day and year of purchase are all completed.
- This warranty will not be reissued, please keep it in a safe place.

MEMO



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