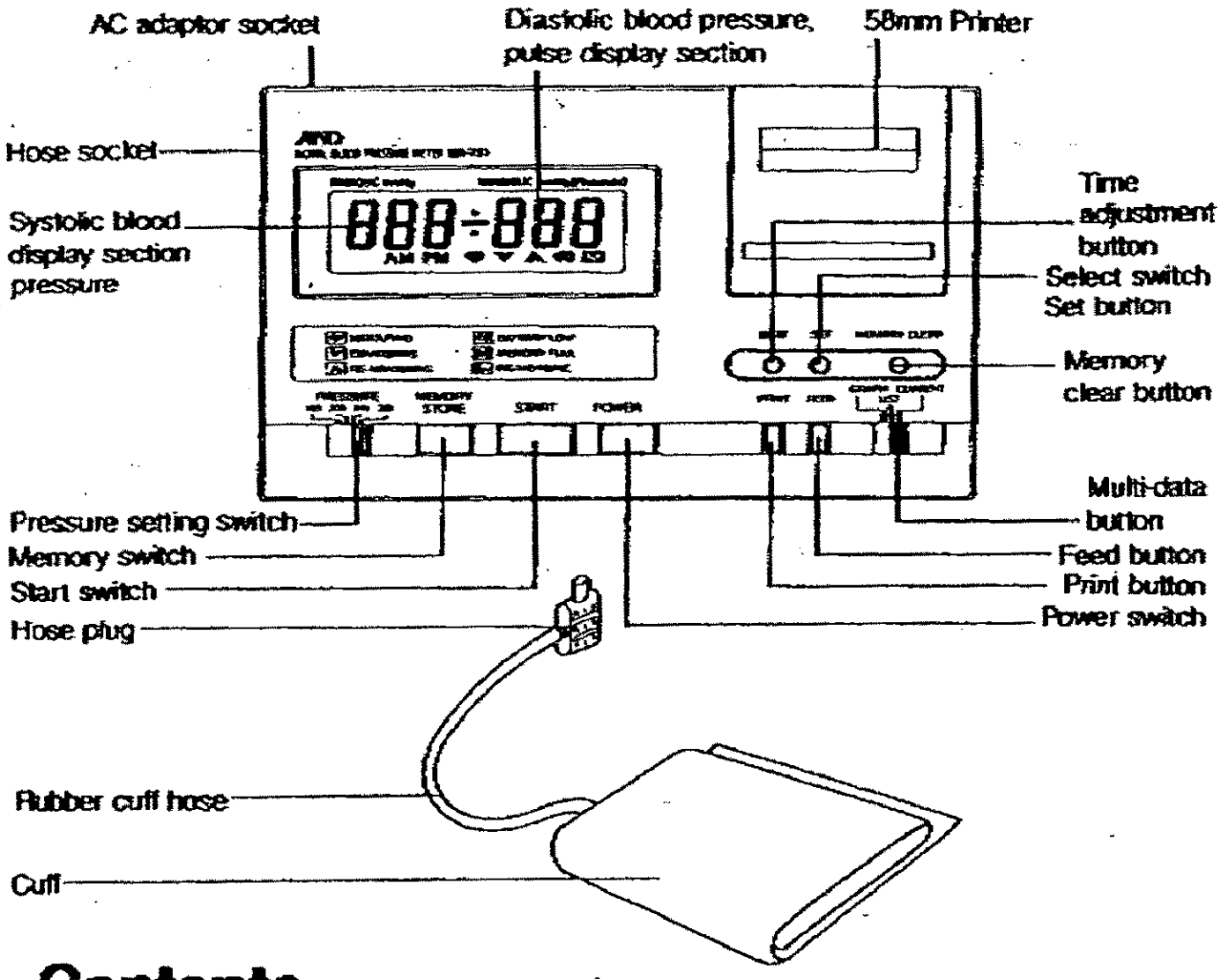
UA751

Blood Pressure Monitor

Identification of Parts



Contents

Notes for Proper Measurements

1. Attach the arm cuff at the proper position of the arm as high as the level of the heart.

2 Do not bump or vibrate the instrument during measurement, or proper measurement will not be achieved.

3. Perform measurement quietly in a relaxed posture.

4. Do not wind the arm cuff over jacket or sweater sleeve, or measurement cannot be done. Also, if the upper arm is squeezed by the shirt sleeve rolled up to the upper arm, proper measurement results will not be obtained.

5. Blood pressure naturally varies from time to time throughout the day.

6. Although such cases are rare, for subjects having an extremely weak pulse or irregular pulse, errors may result which prevent proper measurement. If such abnormal variations are noticed, consult your physician or the sales representative from which you purchased this instrument.

7. This device is intended for adult use. Please consult your physician should you wish to use the device on children.

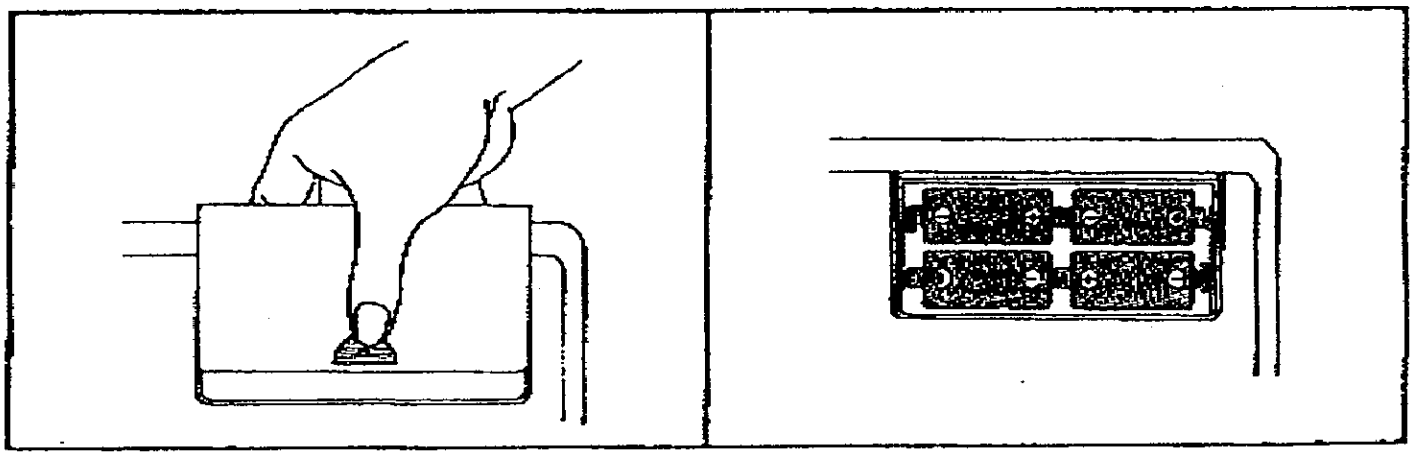
Description of Display Marks

Display mark	Condition/Cause	Corrective action
 **Measurement in progress**	○Mark appears in the measurement condition and flashes when pulse is detected.	Measurement in progress —remain quiet.
 **Exhaust**	○Mark flashes when power is applied and there is air remaining in the cuff. ○Mark flashes at the completion of the measurement until exhaust is complete.	Automatic exhaust is performed.
 **Insufficient pressure**	○Measurement is begun but the pressure was insufficient. Note: If this condition of insufficient pressure is discovered at the beginning of the measurement, automatic repressurization is performed.	Raise the pressurization setting one level and measure once again.
 **Replace batteries**	○Appears when the battery voltage is excessively low.	Replace all four batteries with new ones.
 **Measurement error**	○Appears when the blood pressure could not be measured accurately.	First exhaust air from the cuff, reapply the cuff properly and remeasure.
 **Pulse error**	○Appears when the pulse could not accurately be measured.	
 **Memory full**	○Memory is full.	When 14 pieces of data are entered into memory, this appears on the display.
Exhaust speed flashing (exhaust speed error)	○Flashing when exhaust speed is above 8 mmHg/s.	Adjust exhaust speed to 2 to 5mmHg/s.

Preparation for Measurements

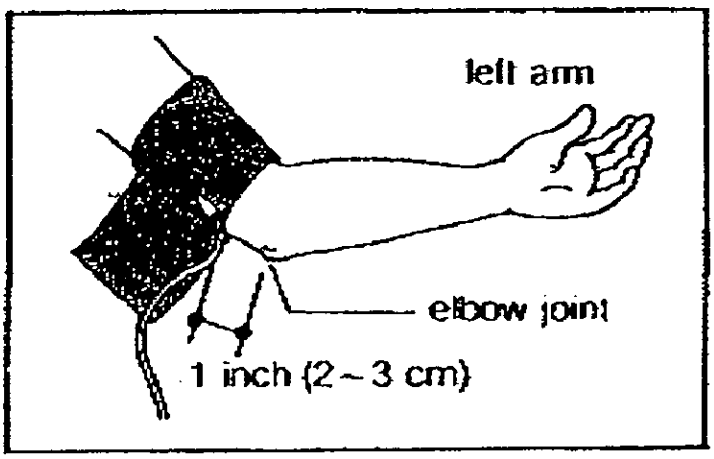
1. Installing Batteries

Remove the battery cover and insert 4 C size batteries into the battery compartment as shown, taking extreme care that the polarities ⊕ and ⊖ are observed.

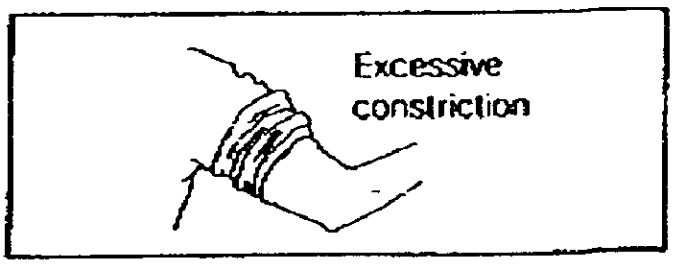


2. Attaching the Arm Cuff

Wind the arm cuff around the left upper arm snugly so that one finger can be inserted under cuff and the bottom edge of the cuff is positioned one inch above the elbow joint.



- Rolling up a shirt or jacket sleeve to allow the arm cuff to be fitted may cause constriction of the upper arm preventing accurate readings.

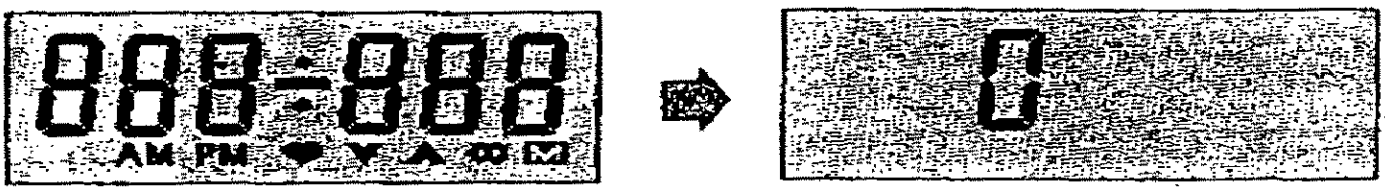


3. Postures During Measurements

Remain in a seated or reclining posture during measurements.

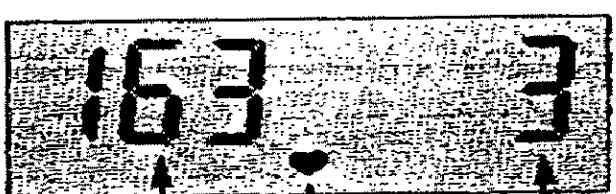
Measurements

1. **Turn Power ON**
   - When power is turned ON, all display marks appear for approximately 1 second.
   - When the " 0 " is displayed the unit is ready for measurement. If other mark appears, release air in the arm cuff by removing the air plug.



Approx. 1 second

2. **Attach the arm cuff to the left arm.**
3. **Set the Pressure Value to a value pressure approx. 30 to 40mmHg above you systolic pressure. There are 4 settings; 160, 200, 240 & 280mmHg.**
4. **Press the Start Switch.**
   - The arm cuff pressurizes when the start switch is pressed.
   - When the start switch is subsequently pressed during pressurization air in the arm cuff is released.
5. **When pressurization is completed, the automatic exhaust mechanism will gradually reduce arm cuff pressure, and the ♥ mark will appear indicating that measurement is in progress.**
   ① Pressure value appears on the left, and exhaust speed on the right side of the display.



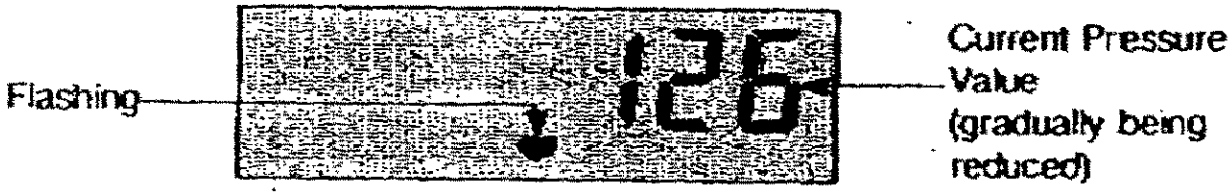
Current Pressure Value (gradually being reduced)

Measurement Mark

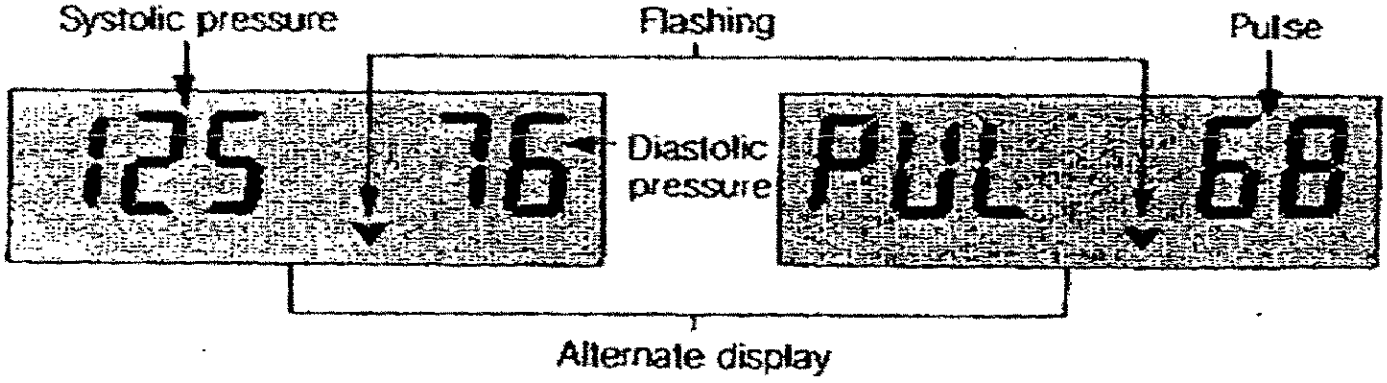
Exhaust Speed

   - Accurate measurement cannot be taken when exhaust speed is outside the 1~5 mmHg range.
   - Remain still during measurement.

② When a pulse is detected, the pressure value moves to the right side of the display. At this time the ♥ mark flashes at the same rate as pulse rate, and the buzzer sounds.



③ When the measurement and buzzer sounds (beep), Systolic pressure is displayed on the left and Diastolic pressure on the right side of the dispaly.
2 or 3 seconds later, pressure value and pulse appear alternately on the display.



- When a measurement is made with insufficient pressure the measurement is automatically repeated.
- If the ▼ mark appears, set the pressure value up one setting and measure again.

6. **Turn Power OFF**
Press the power switch to turn power off. Unit returns to Clock mode.

7. **Subsequent Measurements**
When a measurement needs to be made again, turn off the power once and turn it on to restart the measurement.

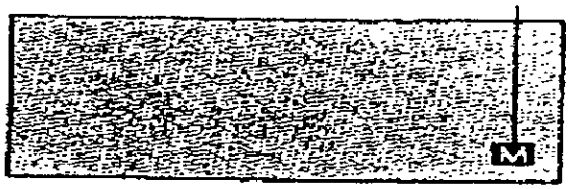
8. **Automatic Power-OFF Function**
If this unit is left ON after measurement, an automatic power-off function turns power off after approximately 2 min. 40 seconds, returning the unit to the clock mode. To continue measurement, press the power switch turning the unit ON.

Memory Function

After blood pressure measurement is completed, press the MEMORY STORE switch to store the measurement results in memory. An audible alarm will be sounded at this time.

Note: The pulse count is not stored.

Memory Full mark



- Memory can store the results of up to 14 measurements. "M" is displayed on the LCD when memory becomes full (14 measurement results).
  Older data in memory will be replaced by new data when the results of the 15th and subsequent measurements are stored.
- The stored data can be printed in both graphs and lists.

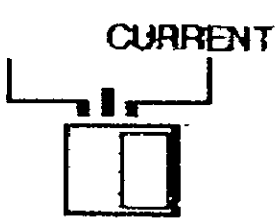
Note: The stored data and clock time can be retained if the batteries are replaced within approx. 1 minute.

- To erase stored data, press the MEMORY CLEAR switch.

Print Function

Printing Instructions

1. **Printing single measurement**
   After blood pressure measurement is completed, set the switch located at the lower-right part of the main unit to CURRENT. Then press the PRINT switch.



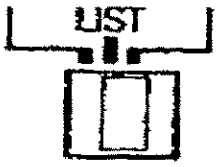
DATE 5-30
TIME 3:54 PM
SYS 124 mmHg
DIA 81 mmHg
PULSE 90 /min

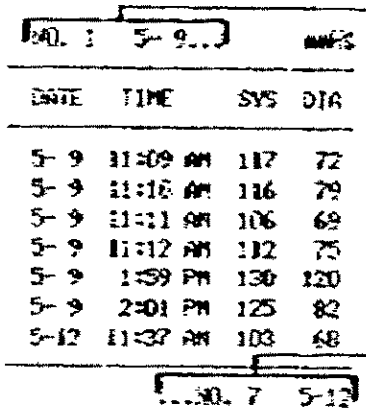
Print Function

2. Printing stored data

Turn the POWER switch on.

- To print a data list, set the above switch to LIST and press the PRINT switch.

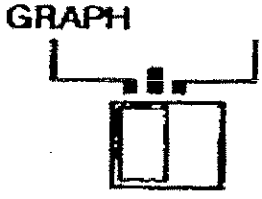


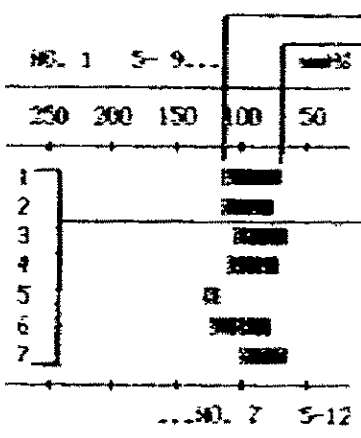


First memory sequence number and date (month/day)

Last memory sequence number and date (month/day)

- To print a graph, set the above switch to GRAPH and press the PRINT switch.





Systolic pressure

Diastolic pressure

Order in which data is memorized.

These numbers indicate the order in which measurement results have been stored in memory. This range is from 1 to 99, and returns to 1 after 99.

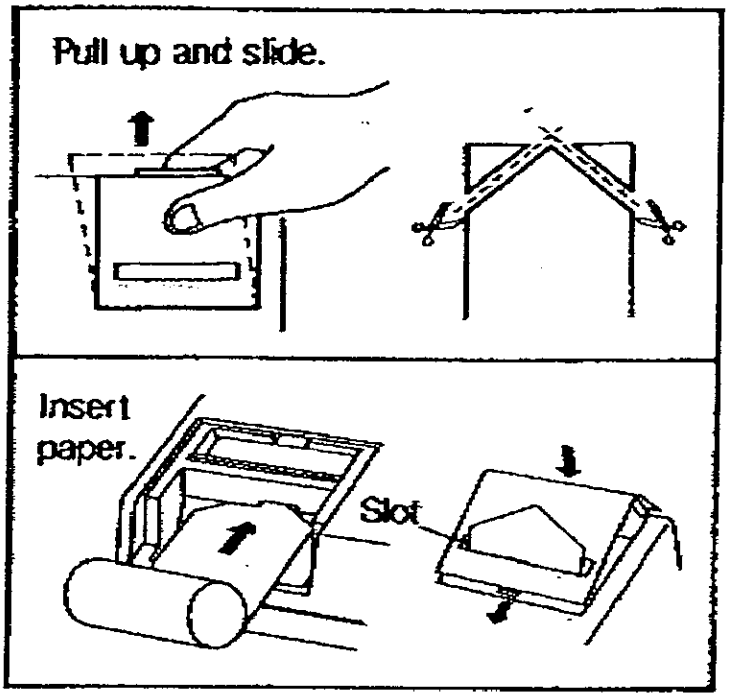
Note: Confirm that the printer is loaded with print paper before printing. Otherwise, the printer may be damaged by printing without print paper.

- * The printer does not operate when the clock is displayed on the LCD.
- * Pulse counts are not displayed.
- * Graphs and data list can be pasted side by side for easier visual comparison.
- * Two or more graphs can be pasted together to show time-series data over specific period.

Loading print paper

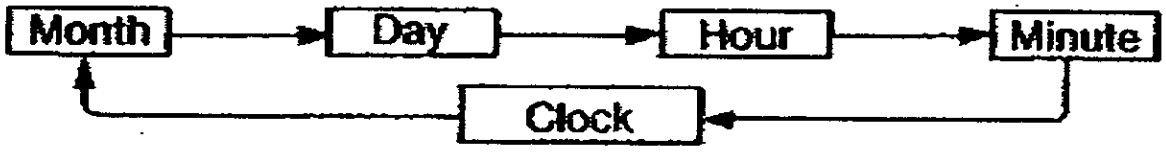
First, display the clock on the LCD.

1 Lift the printer cover off.
2 Cut the leading edge of the print paper as shown. Then insert the paper into the insertion slot and press the FEED switch.
3 Pass the leading edge of the paper into the slot on the printer cover to set paper. And replace printer cover.



How to Set the Clock

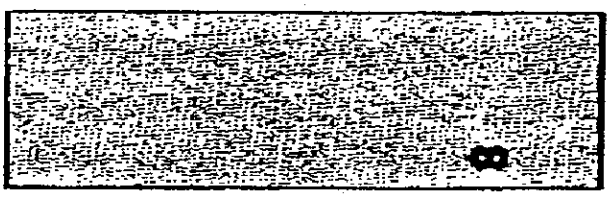
1 Press the DIGIT switch and the "month" display will blink.
2 Press the SET to increment the value being displayed. Continue pressing until the desired value is displayed.
3 The blink display can be shifted in the sequence shown below when the DIGIT switch is pressed. Set the day, hour, and minute displays in the same way.

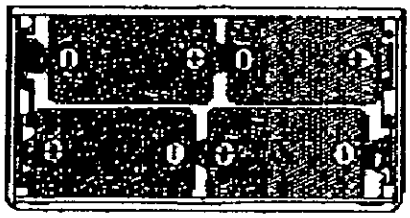


- By holding the SET switch down, the value being displayed will be continuously incremented.
- The clock starts when the DIGIT switch is pressed after the minutes are set.

Battery Replacement

If the battery low mark is displayed on the LCD even once, replace the old batteries with new ones (all at once) as soon as possible.





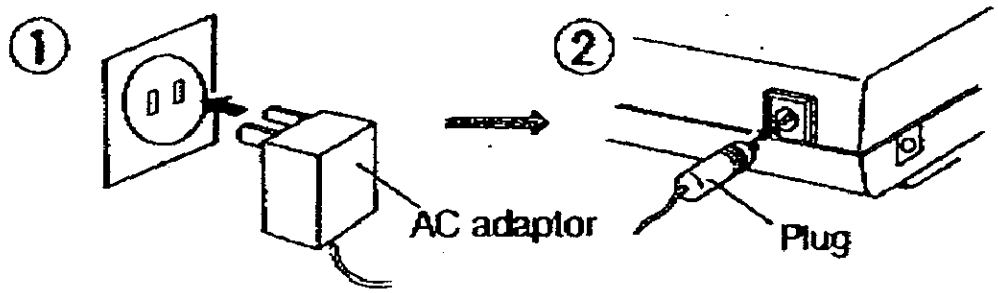
- Replace the batteries while the clock is displayed on the LCD. By replacing the batteries within approx. 1 minute, the stored data and clock time will be retained.

Optional Accessory

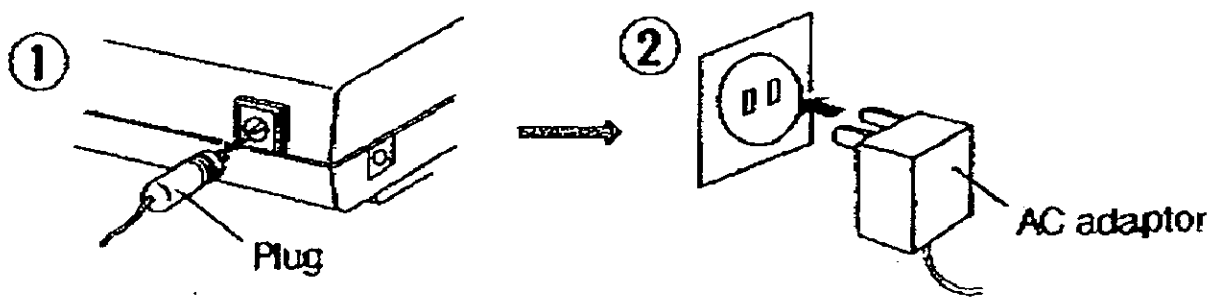
Notes on Using the AC Adaptor

To ensure that the stored data and clock time are not lost, follow the procedures below to plug and unplug the AC adapter.

- Plugging
  1 Plug the AC adaptor into an AC outlet.
  2 Connect the AC adaptor to the meter.



- Unplugging
  1 Disconnect the adaptor from the meter.
  2 Unplug the AC adapter from the AC outlet.



Exhaust Velocity

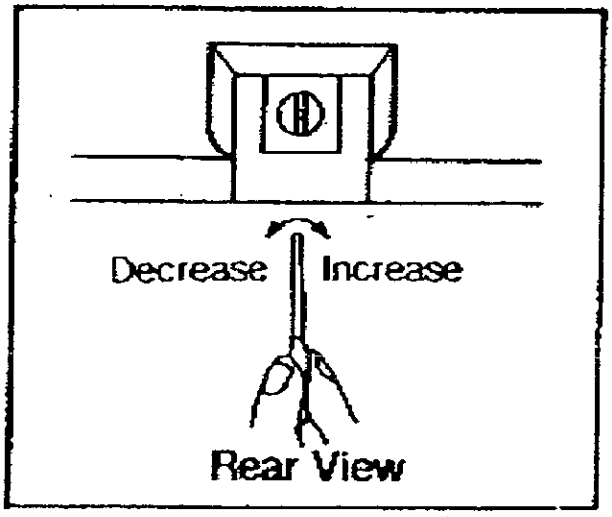
1. The exhaust velocity is the rate of gradual pressure drop from the pressure applied automatically using micropump.
2. The exhaust condition is displayed in the right portion of the display from the time of pressurization until the measurement mark starts flashing.
3. This unit is adjusted so that the exhaust velocity is 1~5mm Hg/s at 150 mmHg. Note that if this exhaust velocity is not proper, correct measurements are not possible.

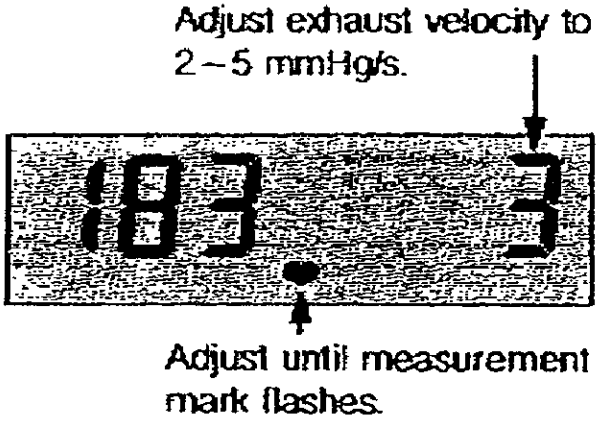
Exhaust Velocity Adjustment

- Perform this adjustment procedure if the exhaust velocity is not within the proper range as described above.

1. Apply the arm cuff to the left arm and pressurize so the pressure is approximately 60mmHg above your suspected systolic pressure. Insert a screw driver into the groove.
2. If the exhaust velocity is too fast, turn to the left and if it is too slow, turn to the right so that the value shown in the right portion of the display is in the range 2~5mmHg/s.
3. If the adjustment is not proper after one try, repeat several times.

- Exhaust velocity will differ slightly depending upon the size of the arm and the method of winding the cuff.



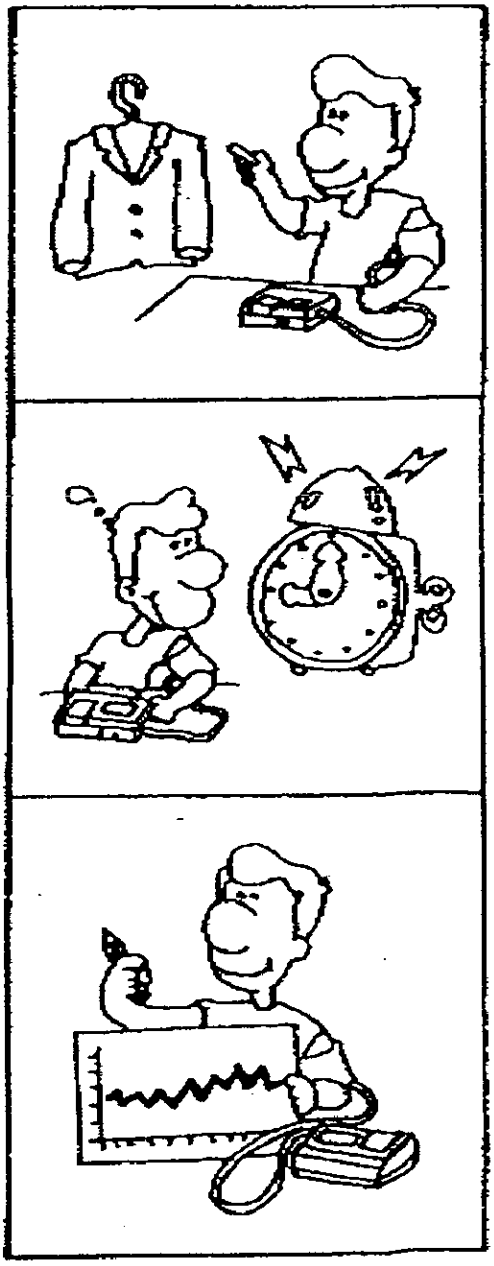


More About Blood Pressure Measurements

How Is A Proper Measurement Made?

Blood pressure varies according to the conditions prevailing at the time of measurement, so be sure to consider the following in order to obtain the most accurate measurements.

1. In preparation for blood pressure measurement, the subject should urinate and should remain relatively still for 10 to 15 minutes prior to measurement.
2. Shirts or other garments which fit tightly on the upper arm should be removed prior to fitting the arm cuff.
3. Exercise, eating and drinking, smoking, etc., prior to measurement can affect the results.
4. The blood pressure varies constantly throughout the day. Measurement should be made regularly at the same time each day.
5. Do not be too impressed by the results of one measurement. Keep a record of blood pressure variations. Many readings tell a story.
6. When making repeated measurement, the arm becomes heavy with blood, resulting in wide variations in measurement values. For this reason, repeated measurements should be made after a rest period of approximately 5 to 10 minutes or after raising the arm to relieve the engorged condition.
7. In general, the blood pressure is low in summer (when it is hot) and high in winter (when it is cold).
8. Emotional stresses may tend to cause blood pressure to rise.



More About Blood Pressure Measurements

What is Blood Pressure?

The blood pressure will reach its highest levels in the large arteries near the heart and drop off toward the peripheral areas of the circulatory system.

The blood pressure varies in accordance with the beating of the heart, and when the heart contracts, squeezing the blood out, the pressure inside the blood vessels is said to be systolic, and when the heart expands, sucking the blood back in, the pressure of the blood inside the blood vessels is said to be diastolic.

Hypertension, which is most common among adults and the old, if left unattended, can cause many health problems including stroke, heart attack, etc. It is therefore necessary to control the blood pressure to prevent it from becoming high, by reducing salt, dietary regimens, and by controlling the subject's activities. Even people who are born with high blood pressure can prevent the progress of high blood pressure by means of adequate control.

Why Is It a Good Thing to Measure Blood Pressure at Home?

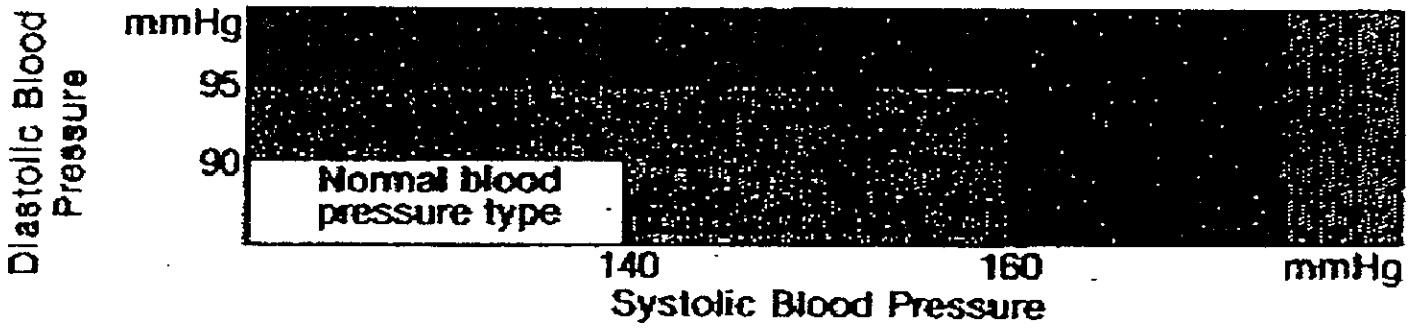
Having one's blood pressure measured by a doctor in a hospital or a clinic, and group health checks, tend to stimulate nervousness in the subject and may even create sufferers of high blood pressure. Also blood pressures varies in accordance with a variety of conditions, and so judgement is not possible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

The blood pressure measured first thing in the morning after getting up, before taking any food, and with the subject still, is known as the fundamental blood pressure. In practice it is rather difficult to record the fundamental blood pressure, but to come as near as possible to measuring the blood pressure in an environment that is close to this, it is useful to be able to take the measurement at home.

Further, you could carry out your own blood pressure control with your own blood pressure meter at home to take blood pressure readings on a regular basis.

WHO Blood Pressure Classifications

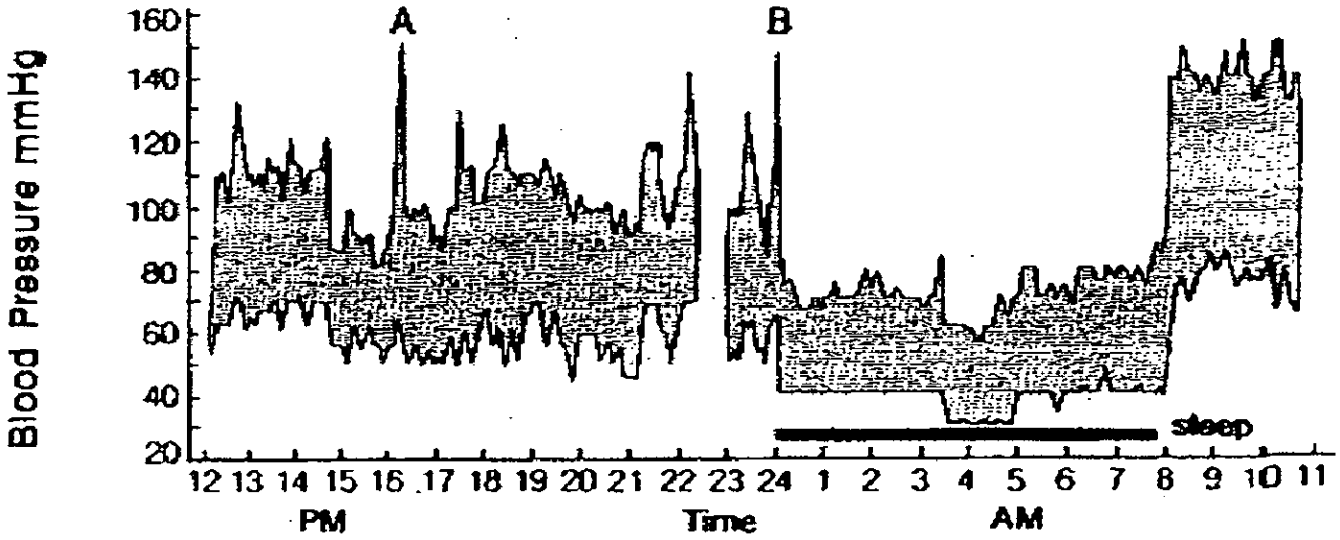
Standards for assessment of high or low blood pressure, without regard to age, have been established by the World Health Organization (WHO), as shown in this chart.



Reference Material: Investigation into Adult Diseases Report by the Ministry of Health and Social Security, 1971.

Variations in Blood Pressure

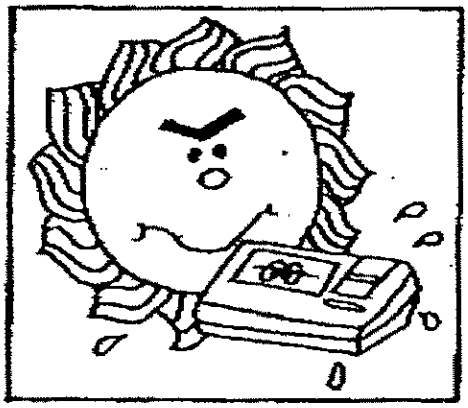
Individual blood pressures vary greatly both on a daily and a seasonal basis. These variations are even more pronounced in hypertense patients. Normally the blood pressure rises while at work and is at its lowest during the sleeping period. The graph below illustrates the variations in blood pressure over a whole day with measurement taken every five minutes.



Shown is data for measurements taken every 5 minutes. The thick line represents sleep. The rises in blood pressure at 4 PM (A in the graph) and 12 PM (B in the graph) correspond to an attack of pain and sexual intercourse. (Beven, Honour & Stott: Clin. Sci. 36:329, 1969)

Precautions

1. This instrument is constructed of precision components, and should not be subjected to extremes in temperature, humidity, direct sunlight, shock or dust.



2. Use a dry, soft cloth to clean the instrument. Do not use thinner, alcohol, benzene, or wet dusters for the cleaning.

3. Avoid tightly folding the cuff or storing the hose in the folded stage for long periods, as such treatment may shorten the life of the components.

Specifications

Model	UA-751
Type	Oscillometric
Display	Digital
Measurement range	20 – 280mmHg (Pressure) 40 – 200 pulses/minute (Pulse)
Accuracy	±3mmHg or 2% whichever greater (Pressure) ±5% (Pulse)
Pressurization	Automatic pressurization using a micro pump
Depressurization	Constant-Air-Release Valve System
Deflation	Automatic exhaust
Power sources	Type C batteries (4) or (Optional AC adaptor)
Battery life	Approx. 6 months with 3 min. usage per day
Operating environment	+10°C ~ +40°C, Less than 85% RH
Storage environment	−20°C ~ +55°C, less than 95% RH
Dimensions	225(W) x 130(D) x 65(H)mm
Weight	Approx. 590g

BLOOD PRESSURE RECORD

DATE	TIME	Systolic	Diastolic	Pulse

NAME _____

* Always remember that your doctor is the only person qualified to evaluate the meanings of your recorded blood pressure. Do not ever attempt to interpret the readings yourself!!