

Guidebook

SmartRead® *Plus* Automatic Wrist Digital Blood Pressure Monitor with Memory

Model 04-233-001

Please read this guidebook completely
before operating this unit.



Lifetime Limited Warranty

This MABIS Blood Pressure Monitor is guaranteed to be free from manufacturing defects for the life of the original registered purchaser under normal use. This limited warranty does not apply to use in any clinical or commercial applications. If the unit fails to operate during the lifetime of the original registered purchaser, return it postage prepaid along with \$5.00 for return shipping and insurance to: MABIS Healthcare, Attn: Repair Department, 1931 Norman Drive, Waukegan, IL 60085. If MABIS determines that the unit failed to operate due to a manufacturing defect, the unit will be repaired or replaced at the option of MABIS. Repair or replacement of the unit is the sole remedy under this limited warranty. This warranty gives you specific legal rights which vary from state to state. As a condition of this warranty, the enclosed warranty registration card must be completed and sent to us within 10 days of the purchase date.

This Limited Warranty constitutes MABIS' only responsibility and obligation to repair and/or replace materials or components. We make no other express or implied warranties, arising by operation of law or otherwise, or any warranty of merchantability or fitness for a particular use or purpose whether or not the use or purpose has been disclosed to MABIS in specifications, drawings or otherwise, and whether or not MABIS' products are specifically designed and/or manufactured by MABIS for the buyer's use or purposes, except for the limited warranty stated above. MABIS will not be responsible for any indirect, incidental, special, consequential, or punitive damages or other loss, including, but not limited to, damage to or loss of other property or equipment and personal injuries, whether to purchaser or others. MABIS shall in no event be liable to the purchaser for any amount in excess of the cost of repair and/or replacement of the unit.



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Introduction

To achieve the maximum benefit from your blood pressure monitor, we recommend that you first consult with your physician or trained health care professional.

Thank you for purchasing a MABIS Automatic Wrist Blood Pressure Monitor. With proper care and use, your monitor will provide you with many years of reliable readings.

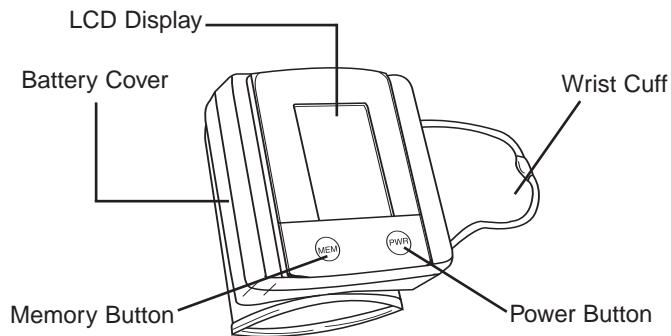
The method of measurement that your Automatic Wrist Monitor uses is called the oscillometric method. The monitor detects your blood's movement through the artery in your wrist and converts the movements into a digital reading. The oscillometric method does not require a stethoscope, making the monitor easy-to-use. The pre-formed cuff requires little effort to apply and is comfortable to wear.

Clinical research has proven a direct relationship between blood pressure in the wrist and blood pressure in the arm. Because the arteries in the wrist and the arm are connected, changes in wrist blood pressure reflect changes in arm blood pressure. Frequent wrist blood pressure measurements will provide you and your physician with an accurate indication of change in your true blood pressure.

People with severe hypertension, severe arteriosclerosis, or severe diabetes, should consult their physician about monitoring blood pressure at the wrist.

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

Product Identification & Caution



Caution

While taking a measurement, you can stop the inflation or deflation process of the cuff at any time by pressing the PWR button.

General Blood Pressure Information

What is Blood Pressure?

Blood pressure is the pressure that is exerted by blood flowing against the walls of the blood vessels throughout your body.

Your heart, which is the center of the circulatory system, provides the force for the blood to flow or circulate. When your heart contracts or beats, the blood is forced through the blood vessels increasing the pressure. This is the highest pressure in the cycle or what is referred to as **SYSTOLIC BLOOD PRESSURE**. In between beats, your heart relaxes and your blood pressure decreases. This is referred to as **DIASTOLIC BLOOD PRESSURE**.

This complete series of events which occurs in a single heartbeat is known as the **CARDIAC CYCLE**.

Your MABIS Automatic Wrist Monitor will automatically read your blood pressure and display both systolic and diastolic readings on the screen. Your systolic will be positioned as the upper number and the diastolic reading will be the lower number.

(systolic) **120/80** (diastolic)

Blood pressure is measured in millimeters (mm) of Mercury (Hg) and is generally recorded with the systolic pressure (120) listed first and the diastolic pressure (80) listed second. The numbers are typically separated by a slash mark (/) as shown above. *Both pressure readings, the SYSTOLIC and the DIASTOLIC, are necessary for a physician to evaluate the status of a patient's blood pressure.*

Please contact your physician for specific information regarding your own blood pressure.

What Influences Blood Pressure?

Many factors such as genetics, age, sex, altitude, physical activity, anxiety, muscular development, certain medications or even the time of day can influence blood pressure. Influences such as sleep or relaxation decreases blood pressure, while anxiety or exercise increases blood pressure.

Why Monitor Your Blood Pressure at Home?

A visit to a physician's office can be a stressful situation for a patient. And, anxiety is a known factor in raising blood pressure. This temporary occurrence of elevated blood pressure at the physician's office is commonly referred to as "white coat syndrome".

Whether or not you experience "white coat syndrome", home blood pressure monitoring provides you with the opportunity to supplement your physician's office measurements. These home readings, when taken over a period of time, can show an accurate indication of change. Furthermore, your records can assist your physician in evaluating your health and in making important decisions in the diagnosis and treatment of your condition. Because of this, it is important to take consistent, daily measurements of your blood pressure.

The variations in your individual readings should only be interpreted by your physician or a trained health care professional.

WHO Blood Pressure Classifications

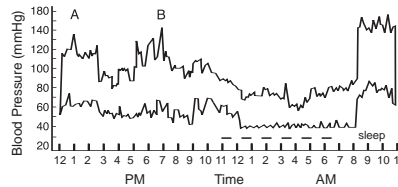
Standards for assessment of high or low blood pressure, regardless of age, have been established in 1999 by the World Health Organization (WHO) as shown in the following chart.

CATEGORY	SYSTOLIC (mmHg)	DIASTOLIC (mmHg)
Optimal	<120	<80
Normal	<130	<85
High - Normal	130-139	85-89
Mild Hypertension	140-159	90-99
Borderline	140-149	90-94
Moderate Hypertension	160-179	100-109
Severe Hypertension	≥180	≥110
Isolated Systolic Hypertension	≥140	<90
Borderline	140-149	<90

This chart is only a general guideline. Please contact your physician to determine your NORMAL BLOOD PRESSURE.

Variations in Blood Pressure

Blood pressure can be influenced by many factors. This change can occur from moment to moment. Normally, blood pressure is lowest during the sleeping period and rises during the day. The graph below represents the variations in blood pressure shown over a day with measurements taken every 5 minutes.



The dotted line represents the sleep period. The rise in blood pressure at 1 p.m. (A in the graph) corresponds to a stressful occurrence and at 7 p.m. (B in the graph) a period of exercise.

Important Information Before Use

1. Blood pressure measurements should only be interpreted by a physician or a trained health care professional who is familiar with your medical history. Through regular use of this device and recording of your measurements, you can keep your physician informed of the changes in your blood pressure.
2. Perform your measurement in a quiet place. You should be seated in a relaxed position.
3. Avoid smoking, eating, taking medication, alcohol consumption or physical activity 30 minutes prior to taking a reading. If you are exhibiting signs of stress, avoid taking your measurement until the feeling subsides.
4. Rest 15 minutes prior to taking a reading.
5. Remove any constrictive clothing or jewelry that may interfere with the cuff placement.
6. Apply the cuff to the proper position on the left wrist. The unit should be located on the inside of your left wrist with the digital display panel in view.
7. Keep the monitor stable during measurement to achieve an accurate reading. Remain still; do not talk during the measurement.
8. Record your daily blood pressure and pulse readings on a chart.
9. Take your readings at the same time, each day (or as recommended by your physician) to get an accurate indication of change in your true blood pressure.
10. Wait a minimum of 15 minutes between readings to allow for the blood vessels to return to normal. The wait time may vary depending on your individual physiological characteristics.

11. Although such cases are rare, for those with an extremely weak pulse or irregular pulse, errors may result which prevent proper measurement. If abnormal variations are noticed, consult with your physician or trained healthcare physician.
12. This device is intended for adult use.

While taking a measurement, you can stop the inflation or deflation process of the cuff at any time by pressing the PWR button.

Battery Installation/Replacement

1. Remove the battery cover, *Fig. 1*.
2. Making sure the battery polarity is correct, install the lower battery and the upper battery, *Fig. 2*.
3. Replace the battery cover, *Fig. 3*.

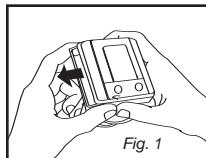


Fig. 1

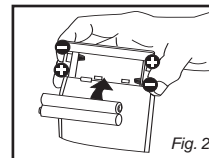


Fig. 2

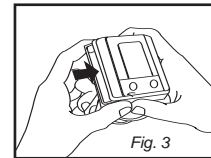


Fig. 3

NOTE: The batteries in your monitor will need to be replaced when the battery energy level indicator is empty, *Fig. 4*. Replace the batteries with two new AAA alkaline batteries.

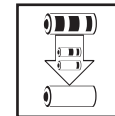


Fig. 4

We recommend that you remove the batteries if the unit will not be used for an extended period of time.

Setting the Date/Time

1. Press the PWR button and hold it down only until '0' flashes on the display, *Fig. 1*. Release the button and two '0's will appear.
2. When two '0's appear on the display, *Fig. 2*, press the MEM button until the year begins to flash in the lower right corner, *Fig. 3*.
3. Use the PWR button to adjust the flashing number. When the correct year is displayed, press the MEM button to confirm the year.
4. Once the year is set, the number in the upper left corner of the display will begin to flash, *Fig. 4*. Press the PWR button to adjust the month. Once the correct month is displayed, press the MEM button to confirm the month.

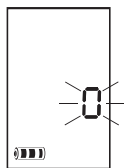


Fig. 1



Fig. 2



Fig. 3

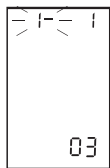


Fig. 4

Setting the Date/Time (*continued*)

5. Once the month is set, the number in the upper right corner of the display will begin to flash, *Fig. 5*. Press the PWR button to adjust the date. Once the correct date is displayed, press the MEM button to confirm the date.
6. Once the date is set, the number in the upper left corner of the display will begin to flash, *Fig. 6*. Press the PWR button to adjust the hour.
- NOTE:** hours are displayed in military time (11:00 p.m. = 23:00). Press the PWR button to adjust the hour. Once the correct hour is displayed, press the MEM button to confirm the hour.
7. Once the hour is set, the number in the upper right corner of the display will begin to flash, *Fig. 7*. Press the PWR button to adjust the minutes. Once the correct minutes are displayed, press the MEM button to confirm the minutes.
8. After confirming the time, the display should display the correct time, *Fig. 8*. **NOTE:** if you made a mistake while setting the clock, remove the batteries and reinsert them. Follow the "Setting the Date/Time" instructions, starting with setting the year.

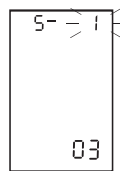


Fig. 5

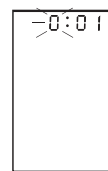


Fig. 6

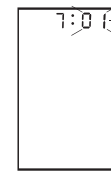


Fig. 7



Fig. 8

Applying Your Blood Pressure Cuff

Avoid smoking, eating, taking medication, alcohol consumption or physical activity 30 minutes prior to taking a reading. If you are exhibiting signs of stress, avoid taking your measurement until the feeling subsides.

Rest 15 prior to taking a reading.

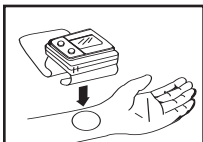


Fig. 1

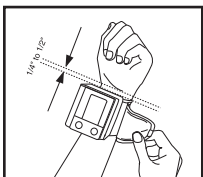


Fig. 2



Fig. 3

1. Remove any constrictive clothing or jewelry that may interfere with the cuff placement.
2. You should be seated with your feet flat on the floor.
3. Hold your left arm in front of you with your palm facing upward.
4. Apply the preformed cuff to your left wrist. The digital display panel should be positioned on the inside area of your wrist facing you, Fig. 1.
5. Adjust the cuff as shown in Fig. 2, 1/4" - 1/2" from the bottom of your palm.
6. Wrap and fasten the cuff securely, yet comfortably around your wrist, Fig. 3.

NOTE: The left wrist should be used unless you are unable to or should not use your left arm or wrist. In consultation with your physician, you may modify the following instructions and apply the cuff to your right wrist.

Taking Your Blood Pressure Reading

Proceed only after reading the previous sections of this manual.

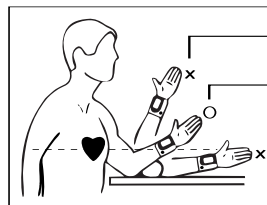


Fig. 1

Measurement value becomes lower.

Correct measurement position (at same height as heart).

Measurement value becomes higher.

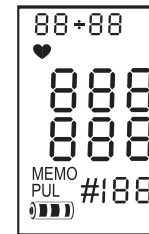


Fig. 2



Fig. 3



Fig. 4

1. Rest your elbow on a table with your palm facing upward. **Raise your hand so that the cuff is at the same level as your heart, Fig. 1.** Relax your hand.
2. Press the PWR button. This will turn the power on and start the measurement process.
3. For a brief moment, the unit will run a self-test, Fig. 2.
4. After the self-test, the cuff will automatically begin to inflate to approximately 180 mmHg.
5. Once the cuff inflates to approximately 180 mmHg, measurement will begin, Fig. 3.
6. The unit will begin to automatically deflate. The numbers appearing on the display will decrease, Fig. 4. The heart symbol will flash in the upper left corner of the display, indicating your pulse rate.

7. When all air is deflated, the measurement is complete. The unit will display your blood pressure (systolic and diastolic) measurements and pulse rate, *Fig. 5*.

8. Record your readings on a chart.

9. At this point, your measurement will be automatically stored in memory. By pressing the MEM button, you can review readings in memory, or simply turn the unit off by pressing the PWR button. Otherwise, your unit will automatically shut off after approximately 3 minutes.



Fig. 5

This monitor inflates the cuff to approximately 180 mmHg. If the system detects that the cuff needs additional pressure, it will automatically continue to inflate in increments of 30 mmHg. The cuff is able to inflate to a maximum of 300 mmHg.

If you need to take another measurement, wait a minimum of 15 minutes between readings to allow for the blood vessels to return to normal. The wait time may vary depending on your individual physiological characteristics.

You can stop inflation at any time by pressing the PWR button. Pressing the PWR button during inflation will cause the cuff to automatically deflate.

Recalling Measurements in Memory

You can recall up to 60 measurements plus the average of all readings stored in memory. These readings can be recorded on a Blood Pressure Log or can be shared with your physician or trained healthcare professional.

1. Press the MEM button to view the most recent reading, *Fig. 1*. The display will alternate between two screens. The first screen will show the date of the measurement, along with the systolic and diastolic values. The number of the reading will be displayed in the lower right corner of the screen.
2. If no buttons are pressed, after approximately three seconds, the display will show the time of the measurement along with the pulse rate, *Fig. 2*. The systolic and diastolic values will continue to be displayed.
3. Continue to press the MEM button to view the next previously stored measurement, *Fig. 3*. Wait at least three seconds per measurement to review the time and pulse rate of the measurement.
4. The last reading displayed is the average of all measurements stored in memory. An 'A' will appear in the upper left corner of the display, *Fig. 4*.

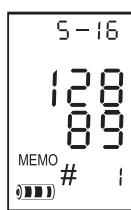


Fig. 1

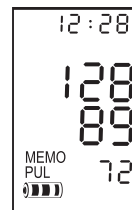


Fig. 2



Fig. 3

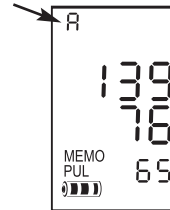




Fig. 4

All stored measurements will be erased by removing and reinstalling one of the batteries.

Description of Display Symbols

DISPLAY	CONDITION	ACTION
	Appears when pulse reading is displayed.	Record pulse reading.
MEMO #	Appears when storing or recalling a measurement in memory.	Memory function in progress.
Err	Appears when the cuff experiences an irregular deflation speed.	Wait a minimum of 15 minutes and remeasure. Loosen cuff to allow blood circulation in the wrist and hand while waiting.
Err 330	Appears when cuff was overpressurized (inflated to more than 300 mmHg).	Wait a minimum of 15 minutes and remeasure. Loosen cuff to allow blood circulation in the wrist and hand while waiting.
00	Appears when PWR button was pressed too long when starting a measurement.	Review and follow "Applying Your Blood Pressure Cuff" and "Taking Your Blood Pressure Reading" sections.
	Appears when battery voltage is excessively low	Replace both batteries with new ones

Troubleshooting

If any abnormality occurs during use, please check and correct the following:

Condition

Display is blank when power is on

Measurement incomplete or abnormally low or high values displayed.

Measurements are different from those typically measured by physician or every measurement reading is different.

Correction

Check and correct the polarity of the installed batteries. Reinstall or replace batteries.

Review and follow "Applying Your Blood Pressure Cuff" and "Taking Your Blood Pressure Reading" sections. Replace the batteries.

Remember, blood pressure readings are influenced by physical and mental conditions and/or even the time of day. Daily measurement recordings should be interpreted by your physician.

Care, Maintenance and Storage

1. **Only** use a soft, dry cloth to clean your blood pressure monitor.
2. Avoid using any types of liquids on the monitor or cuff.
3. Store your unit in the provided storage case when not in use.
4. Do not store the unit where it will be exposed to direct sunlight, dust or humidity. Avoid extreme temperatures.
5. **Never** disassemble the monitor or the cuff.
6. Dropping or subjecting your blood pressure monitor to strong shocks should be avoided.

Product Specifications

Name and model number	SmartRead® <i>Plus</i> Wrist-styled Blood Pressure Monitor with Memory, 04-233-001
Display system	Digital display system/LCD
Measuring method	Oscillometric method
Power source	Two AAA alkaline batteries
Measuring range	Systolic: 50-250 mmHg Diastolic: 40-180 mmHg Pulse: 40-160 beats/minute
Accuracy	Pressure: ±3mm Hg Pulse: within ±5% of reading
Pressurization	Automatic pressurization by pump
Deflation	Automatic pressure release valve. Optimum cuff inflation level determined by Fuzzy Logic
Memory	60 measurements plus average of all measurements
Automatic Power Off	Approximately 3 minutes after last key operation
Battery life	Approximately 200 measurements
Operation	
Temperature	50°F - 104°F (10°C - 40°C)
Humidity	15-90% RH max.
Storage	
Temperature	-4°F - 122°F (-20°C - 50°C)
Humidity	15-95% RH max.
Weight	4.4 oz. (with batteries)
Dimensions	2-1/2" x 2-9/16" x 1-1/8"
Wrist Circumference Range	Suitable for 4-7/8" - 8-1/8"
Accessories	Storage case, Instruction Guidebook, two AAA alkaline batteries

Specifications are subject to change without notice.

Sample Blood Pressure Log

Name: _____ Age: _____ Weight: _____

Date	1/2	1/2	1/3																	
Time	7:00 AM	9:30 PM	7:30 AM																	
mmHg																				
240																				
220																				
200																				
180																				
160																				
140																				
120																				
100																				
80																				
60																				
Pulse	68	71	69																	
Body Condition	Headache in AM	—	Tired, Restless Night																	