

BLOOD PRESSURE MONITOR | Premium

Instruction Manual
Model: BD412



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BIOS VP of Marketing - Mark Beaton accepts the 2017 Hypertension Canada Certificate of Excellence from Angelique Berg, CEO of Hypertension Canada

Trusted by Canadians for 3 Generations

At BIOS Diagnostics™, we are proud of our legacy in blood pressure monitoring in Canada. From the early 1930s to 1987 we manufactured “Tycos” brand professional blood pressure equipment for doctors and hospitals in Canada.

In the 1970s we pioneered the first blood pressure devices for monitoring at home, and in the 1980s we introduced digital technology in Canada. We haven’t been counting, but we know that millions of our home-use monitors have been used by Canadians in the last 30 years.

All BIOS Diagnostics™ devices are developed in collaboration with physicians and clinically tested to prove their measurement accuracy. For more information on clinical tests and other BIOS medical products, visit our website at **www.biosmedical.com**.

If you have questions about this device or blood pressure monitoring at home, email us at **support@biosmedical.com** or call the **BIOS Medical Hotline 1-866-536-2289**.

Blood Pressure Monitor - Premium

Instruction Manual

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1. Introduction

Thank you for purchasing the BIOS Diagnostics™ Blood Pressure Monitor – Premium. Designed for convenient and easy operation, this device provides a simple, yet accurate method to measure your blood pressure.

Your blood pressure is an important parameter that can be used to monitor your health. This device enables you to monitor your blood pressure regularly, and maintain a record of your blood pressure measurements. You can then use this record to assist your physician in diagnosing and maintaining a healthy blood pressure level.

Indications for Use:

This blood pressure monitor (BD412) is intended to measure the systolic and diastolic pressure of an adult individual by using a non-invasive oscillometric technology. This device is designed to be portable, and used in both home and professional environments for every day blood pressure monitoring.

1.1 Features

The BD412 is a fully automatic, digital device that uses oscillometric technology to measure the arterial blood pressure and pulse rate. The cuff is wrapped around the upper arm, and automatically inflated by the air pump. The device senses weak fluctuations of pressure in the cuff produced by extension and contraction of the artery within the arm in response to each heartbeat. The amplitude of the pressure waves is measured, converted in millimeters of the mercury column, and shown on the display.

- **Memory Features** 4 users, 240 blood pressure readings each with time and date.
- **Advanced BP Assessment Indicator** Each reading is assessed according to the WHO classification for blood pressure. Overall assessment, as well as individual systolic, and diastolic assessment is built into this device.
- **Advanced Irregular Heartbeat Detection** This device not only indicates if an irregular heartbeat was present during a reading, but provides insight on irregular heartbeat frequency across readings over time.
- **Advanced Averaging Modes** This device averages memory data in several ways: average of all readings, average of AM readings, and average of PM readings.
- **Built-in Cuff Storage** Conveniently roll and store your cuff in the back of the monitor.

This device is easy to use and has been proven in clinical studies to provide excellent accuracy.

Before using the BD412, read this instruction manual carefully and keep it in a safe place.

The blood pressure monitor meets the accuracy requirements of Hypertension Canada, and has been tested for clinical accuracy.

1.2 Important Safety Information

Refer to the following sections to learn about important safety instructions and how to take care of the BIOS Diagnostics™ Blood Pressure Monitor - Premium.

1.2A Safety Information

- Self-measurement means control, not diagnosis or treatment. Your values must always be discussed with your doctor or a physician who is familiar with your family history.
- If you are undergoing medical treatment and receiving medication, consult your doctor to determine the most appropriate time to measure your blood pressure. Never alter the dosages of any medication

without direction from your doctor.

- Your blood pressure depends on several factors, such as age, gender, weight, and physical condition. It also depends on the environment and your state of mind at the time of measurement. In general, your blood pressure is lower when you are asleep and higher when you are active. Your blood pressure may be higher when recorded at a hospital or a clinic, and may be lower when measured in the relaxing comfort of your home. Due to these variations, we recommend that you record your blood pressure regularly at home as well as at your doctor's clinic.
- Try to record your blood pressure regularly at the same time of the day and under the same conditions. This will help your physician detect any extreme variations in your blood pressure and thus treat you accordingly.
- Morning Hypertension (>130/80 mmHg): Recently, several studies have identified elevated cardiovascular risks (heart failure, stroke, angina) associated with "morning hypertension". There is a typical rise in blood pressure during the physiological changes from sleep to arising for the day.
- The ideal time to measure your blood pressure is in the morning just after you wake up, before breakfast and any physical activity, and in the absence of the urge to urinate. If this is not possible, try to take the measurements later in the morning, before you start any physical activity. Relax for a few minutes before you record your blood pressure.
- The cuff should not be applied over wounds as it may cause further injury.
- **Do not** attach the cuff to an arm being used for IV infusions or any other intravascular access, therapy or an arteriovenous (A-V) shunt. The cuff inflation can temporarily block blood flow, potentially causing harm to the individual.
- Your blood pressure increases or decreases under the following circumstances:

Blood pressure is higher than normal:

- When you are excited, nervous, or tense
- While taking a bath
- During and after exercise or strenuous physical activity
- When it is cold
- Within one hour after meals
- After drinking tea, coffee, or other caffeinated drinks
- After smoking tobacco
- When your bladder is full

Blood pressure is lower than normal:

- After consuming alcohol
- After taking a bath

- The pulse display is not suitable for checking the frequency of heart pacemakers.
- If you have been diagnosed with a severe arrhythmia or irregular heartbeat, vascular constriction, liver disorders, or diabetes, have a cardiac pacemaker, or are pregnant, measurements made with this instrument should only be evaluated after consultation with your doctor.
- Take care while handling the batteries in the device. Incorrect usage may cause battery fluid leakage. To prevent such accidents, refer to the following instructions:
 - Insert batteries with the correct polarity.

- Turn off power after use. Remove and store the batteries if you are not planning to use the device for an extended period of time.
- **DO NOT** mix different types, brands, or size of batteries. This may cause damage to the product
- **DO NOT** mix old and new batteries.
- Remove batteries and dispose of them according to the proper regulations in your area.
- **DO NOT** disassemble batteries or expose them to heat or fire.
- **DO NOT** short-circuit the batteries.
- **DO NOT** use rechargeable batteries.

1.2B Care of the Device

For prolonged life of your blood pressure monitor, note the following instructions:

- **DO NOT** drop or bang the unit. Prevent sudden jerks, jars, or shocks to the device to prevent damage.
- **DO NOT** insert any foreign objects in any device openings or vents.
- **DO NOT** disassemble the unit.
- If the unit has been stored at very low or freezing temperatures, allow to reach room temperature before using it.
- **DO NOT** store the unit in direct sunlight, high humidity, or in places with a lot of dust.
- Clean the device with a soft dry cloth. **DO NOT** use gasoline, thinner or similar solvents. Carefully remove spots on the cuff with a damp cloth and soap. **DO NOT** wash the cuff.
- **DO NOT** use the device if you think it is damaged or if anything appears unusual.
- Ensure that children do not use this device unsupervised; some parts are small enough to be swallowed.
- Using the unit in the immediate vicinity of mobile phones, microwave appliances or other devices with strong electromagnetic fields may result in impaired functioning.
- **DO NOT** use this device close to strong electromagnetic fields, such as mobile telephones or radio installations. Keep a distance from such devices when using this unit.

1.2C Comparing Readings to Other Blood Pressure Devices

Many questions arise when two blood pressure devices are compared in an effort to check accuracy. An accurate comparison requires repeatable measurements under the same conditions to a “reference device” with known accuracy. Significant time is required to reduce naturally occurring blood pressure variability during the test. The subject should be seated comfortably with feet flat on the floor, and have rested for 5 minutes before the first reading to allow blood pressure levels to stabilize. The patients back, elbow, and forearm should be supported, and the middle of the cuff should be at the level of the right atrium. There should be no talking or moving during the measurement and if comparing to an aneroid gauge or mercury column, observers should avoid parallax and be careful not to round measurements.

The most accurate way to compare devices is to take two readings at the same time. However, most people and doctor’s offices do not have the equipment necessary to measure blood pressure from two devices simultaneously. To take sequential measurements properly requires a pair of initial measurements to determine the subjects blood pressure level: first with the reference equipment, followed by 60 seconds, then with the monitor-under-test. The actual accuracy test requires three pairs of measurements with 60 seconds between measurements. These measurements are averaged and a comparison can be made. Since most people tend to relax and their blood pressure falls with subsequent measurements, following this protocol reduces these natural changes in blood pressure levels. The standard technical error of both consumer and

professional devices is normally ± 3 mmHg, so a discrepancy of 6 mmHg is acceptable even when the devices are working within their specifications.

Any comparisons without a known “reference device” and not following the procedures described above will yield unreliable results. In addition, to do an accuracy test properly the reference device must also be tested to a known reference to confirm its accuracy, prior to being used as the reference for comparisons.

1.2D Calibration

Digital blood pressure monitors do not require regular recalibration, unless the product has been dropped and internal parts have been damaged. If the unit turns on and does not display an error code, the product is working properly. In extremely rare cases, the cuff may have developed a pin-hole leak, or the gasket where the cuff connector enters the monitor may not have a proper seal; both of these leaking air issues will potentially cause errors in accuracy, but otherwise the product will work accurately without drifting out of calibration.

1.3 What Do Your Numbers Mean?

Blood pressure is the pressure in your blood vessels while blood circulates throughout your body. High blood pressure or “Hypertension” is the pressure at which one's normal average blood pressure is considered too high and other health risks including: heart attack, stroke, dementia, kidney failure, heart disease and erectile dysfunction may occur. It is expressed as two numbers: systolic/diastolic 120 mmHg/80 mmHg (mmHg= millimeters of mercury). “Systolic” numbers refer to the pressure on the walls of your arteries while the heart is contracting and pushing blood. “Diastolic” pressure is the lower number when the heart is at rest and relaxed. A simple way to understand this is to picture a garden hose. When the tap is turned on, the immediate pressure on the walls of the hose is the “systolic” number, and when the tap is turned off it is the “diastolic” number.

There are many different causes of high blood pressure. We differentiate between common primary (essential) hypertension, and secondary hypertension. The latter group can be ascribed to specific organic malfunctions. Please consult your doctor for information about the possible origins of your own increased blood pressure values.

1.4 Normal Blood Pressure Values

When rested, and measuring your blood pressure at home, measurements with diastolic pressure readings above 80 mmHg or systolic readings over 130 mmHg are considered high. If you obtain consistent readings in this range, consult your doctor immediately. High blood pressure values over time can damage blood vessels, vital organs such as the kidney, and your heart. With blood pressure values that are too low (i.e., systolic values under 105 mmHg or diastolic values under 60 mmHg), consult with your doctor.

Systolic	Diastolic	Comment
Below 120	Less than 80	This range is considered “ Optimal ”
120-129	70-79	This range is considered “ Elevated ” or “ Pre-hypertension ”. Discuss with your health care professional. Lifestyle modifications may be required to avoid advancing into Hypertension.
130 - 139	80 - 89	This is in the hypertension range. Discuss with your health care professional. Medication(s) and lifestyle modifications are typical treatments.
140 - 179	90 - 119	Discuss with your medical professional, medication(s) and lifestyle modifications are necessary to control your hypertension
180 and above	120 and above	This is in the “ Hypertensive Crisis ” range. Consult your doctor immediately, or go to the hospital if you are experiencing any chest pain, shortness of breath, or symptoms of stroke.

Adapted to include new information as outlined in Hypertension Canada's 2025 Understanding and measuring your blood pressure guideline.

Important for Canadians:

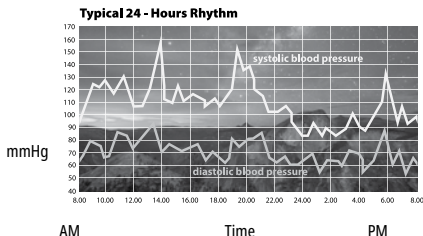
*** Hypertension measured at home $\geq 130/80$**

For further information, see our website www.biosmedical.com.

1.5 Common Blood Pressure Questions and Answers

a) Why is my blood pressure reading always different?

Your blood pressure changes constantly. It is quite normal for blood pressure to fluctuate as much as 50 mmHg throughout the day. Blood pressure is normally lowest at night, but increases during waking hours when the stress and activities of everyday life are highest.



b) Why is the doctor's reading different from the reading taken at home?

Your blood pressure can vary due to the environment (temperature, nervous condition, etc.).

When measuring blood pressure at the doctor's office, it is possible for blood pressure to increase due to anxiety and tension; this is known as “White Coat Hypertension”.

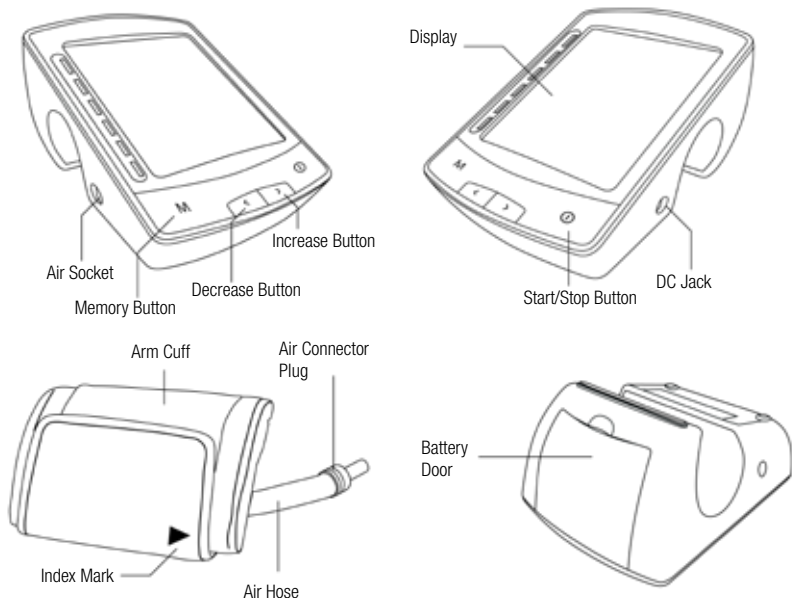
c) Why should I monitor blood pressure at home?

One or two readings will not provide a true indication of your normal blood pressure. It is important to take regular, daily measurements and to keep records over a period of time. This information can be used to assist your physician in diagnosing and preventing potential health problems.

2. Getting Started

2.1 About the BD412

This section describes the various components of the Blood Pressure Monitor - Premium.



Upper Arm Cuff:

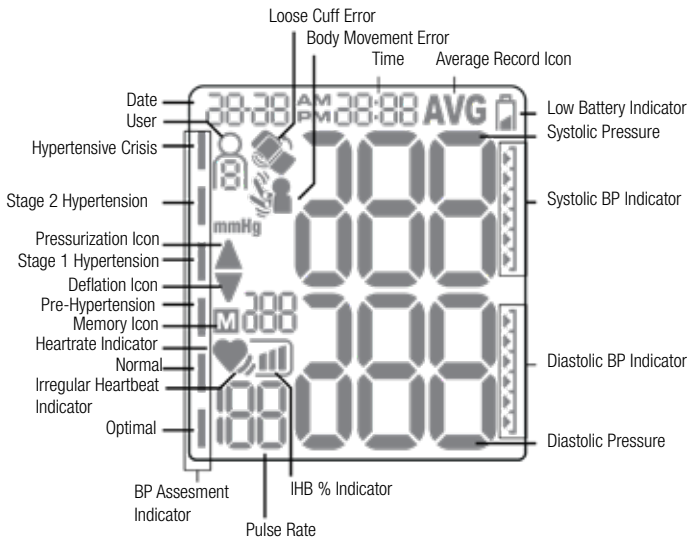
Wide range cuff for arm circumference 22 - 44 cm/8.7" - 17.3".

Cuff connection:

Insert the cuff connector into the opening provided on the left side of the monitor as shown in the diagram.

2.2 About the LCD Screen

The LCD screen displays the systolic and diastolic blood pressure measurements along with your heart rate. It also displays previously recorded measurements with date and time, when the appropriate button is pressed.



2.3 Inserting the Batteries

Follow these steps to insert the four included “AA” batteries into the device.

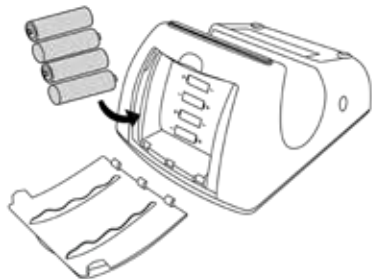
1. Open the battery cover located on the top side on the unit as shown.
2. Insert the four “AA” batteries with the correct polarity as indicated.
3. Replace the battery compartment cover.

NOTE:

- When the battery power becomes weak, the [] icon and “E6” appear on the display, replace all batteries with new ones. **DO NOT** mix old and new batteries.
- Please use “AA” Long-Life or Alkaline 1.5V batteries.
- Never use rechargeable batteries. This may damage the unit.
- Battery life may vary with ambient temperature, and may decrease at low temperatures.

2.4 Using an AC/DC Power Adapter (Accessory Sold Separately)

1. Insert the AC adapter cord into the socket on the right side of the device.
2. Plug the AC adapter into a wall outlet.
3. To remove the AC adapter, first disconnect it from the wall outlet, then from the monitor.



NOTE:

- Optional AC adaptor should comply with the requirement of IEC 60601-1 standard.
- Only use adapters with the specified voltage rating sold by a reputable dealer. Some AC adapters may vary in quality in terms of output voltage and polarities, causing possible risks for yourself, and/or the device.
- When the AC adapter is in use, the device does not draw power from batteries.



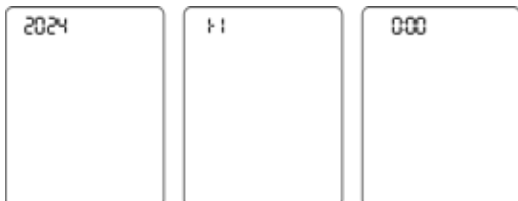
3. Using the Device

This section describes how to get the maximum benefit from your BD412 blood pressure monitor. Follow the instructions carefully to get an accurate measurement of your blood pressure and pulse rate.

3.1 Setting Time, Date, and Year

NOTE: You must set up time and date when installing new batteries, or connecting to a power supply.

1. After installing the new power source, **"YEAR"** will start to blink. Use the [**</>**] buttons to select the **YEAR**, and confirm selection by pressing the [**M**] button.
2. Repeat the same process to set the **MONTH** by using the [**</>**] buttons, and the [**M**] button to confirm.
3. The same process is repeated to set the **DATE**. Use the [**</>**] buttons to select, and the [**M**] button to confirm.
4. Finally, the **TIME** can be set. **HOUR** is selected first, then **MINUTE** using the [**</>**] buttons to select, and the [**M**] button to confirm.

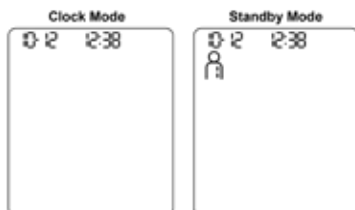


NOTE: In order to change any setting you must repeat the process and confirm each setting by pushing the [**M**] button.

NOTE: When the device is connected to power, and in clock mode (sleep). Press the [**⏰**] or [**M**] button to wake the device. Then, hold the [**M**] key for 5 seconds until the content on the display blinks. Follow the same procedure as above to set.

3.2 Selecting the User

1. Start by pressing the [ⓘ] or [M] button to wake the device from clock mode, and put it into standby mode (if required).
2. Using the [←]/[→] buttons, select user 1, 2, 3, or 4. Confirm this selection by pressing the [ⓘ] button.



3.3 Obtaining Accurate Measurements

Your blood pressure can vary based on numerous factors, physiological conditions, and your surroundings.

Follow these guidelines to obtain accurate and error-free measurements of your blood pressure and pulse rate.

3.3A Tips on Taking Accurate Measurements



In the morning before breakfast, 2 hours after dinner, before taking medication.



Avoid coffee and smoking within the hour, and no exercise 30 minutes before measuring.



Do not speak while taking the measurement.



Sit with legs uncrossed so as not to restrict blood flow.



Ensure that the cuff is level with the heart while the arm is supported on the table.



Empty bladder (if necessary).



Rest quietly for 5 minutes. Remain calm and quiet while the measurement is in process.



Take measurements on the non dominant arm.



Sit with back supported and measurement arm resting on a table. Sit with feet flat on the floor.

3.3B Common Sources of Error

All efforts by the patient to support the arm can increase blood pressure. Make sure you are in a comfortable, relaxed position and do not activate any of the muscles in the measurement arm during the measurement. Use a cushion for support if necessary.

ATTENTION:

Comparable blood pressure measurements always require the same conditions with a peaceful and calm environment. Ensure that you take measurements under the same conditions to obtain an accurate and reliable reading.

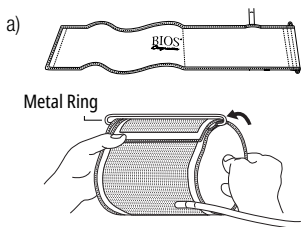
- If the arm artery lies considerably lower or higher than the heart, an erroneous value of blood pressure is measured. Each 15 cm difference in height results in a measurement error of 10 mmHg.

- A loose cuff causes false measurement values.
- With repeated measurements, blood accumulates in the arm, which can lead to false results. Consecutive blood pressure measurements should be repeated after at least a 45 second pause, or after the arm has been held up in order to allow the accumulated blood to flow away.

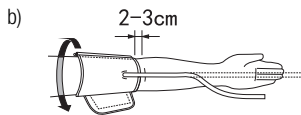
3.3C Fitting the Wide Range Cuff

NOTE: Visit www.biosmedical.com for a video that illustrates how to properly fit the cuff.

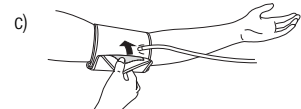
a) Putting the cuff Velcro® side down on a table, the words on the cuff should be facing right side up. Put the end of the cuff (with fastener) through the metal ring, making the cuff a cylinder. (Ignore this step if your cuff is already set up.) Proper assembly allows the Velcro® to match up properly. Measure on your non-dominant arm, unless there is a >10 mmHg difference with the other arm, in which case use the arm with the higher pressure.



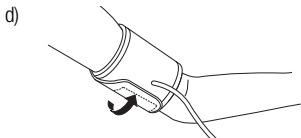
b) Place the cuff around your bare arm. Make sure the bottom edge of the cuff is about 1" (2-3 cm) above the elbow joint. Adjust the cuff so that the rubber tubing under the cuff lies over the brachial artery, which runs on the inside of the arm. Pull the cuff and tighten it by attaching the Velcro® fastener.



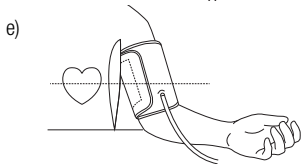
c) The cuff should fit snugly around the bare arm, but not too tight. You should be able to fit two fingers under the cuff. If the cuff is the wrong size, the device will not measure your blood pressure accurately. Contact the store, or BIOS Medical for other sized cuffs.



d) Place the arm on the table (palm facing upwards) so that the cuff is at the same level as the heart. Make sure there is no kink in the hose.

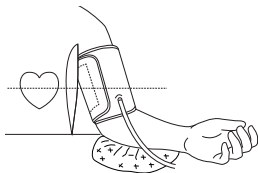


e) You can adjust the level of your arm by putting a cushion under your arm. Ideally, the cuff should be at heart level.



f) Remain seated in a comfortable room temperature for at least 5 minutes, then start the measurement.

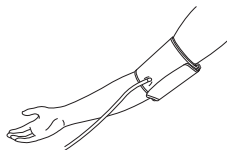
f)



g) For those who cannot put the cuff on the left arm, put it on the right arm as shown.

h) More than 6 consecutive measurements will cause blood accumulation in the lower arm which will affect the measuring results. To improve reading accuracy, raise the arm being measured, squeeze and relax your hand several times, then take another measurement. Another option is to take the cuff off and wait at least 5 minutes before repeating measurement.

h)



i) If this device was stored in low temperature, it is necessary to leave it in room temperature for at least 1 hour, otherwise the measurement can be inaccurate.

i)



Comment:

Continue to use the same arm for comparisons. It is not unusual for there to be a difference in blood pressure between arms. Initially, check BP on both arms. If one arm is 10mmHg higher, continue to measure on that arm.

Comparable blood pressure measurements always require the same conditions (relax for several minutes before taking a measurement).

ATTENTION: DO NOT use a cuff other than the original cuff contained in this kit!

3.4 Measuring Your Blood Pressure

After following the guidelines described in the previous section and placing the cuff around your upper arm, you are now ready to measure your blood pressure. Follow these steps to record your measurement.

1. If required press the [ⓘ] or [M] button to wake the device from clock mode.
2. Select the user following the outlined instructions in section **3.2 Selecting the User**.
3. Press the [ⓘ] button to start the measurement. The cuff begins to inflate while the increasing cuff pressure is displayed on the screen. After the suitable inflation pressure is reached, the cuff stops inflating and the pressure gradually falls. The cuff will fully deflate when the measurement is completed. The systolic and diastolic blood pressure values along with the pulse rate are displayed on the screen.
4. When finished with the unit you can press the [ⓘ] button to force the unit into clock mode (sleep).

*The device will automatically go into clock mode (sleep) if idle for 2 minutes.

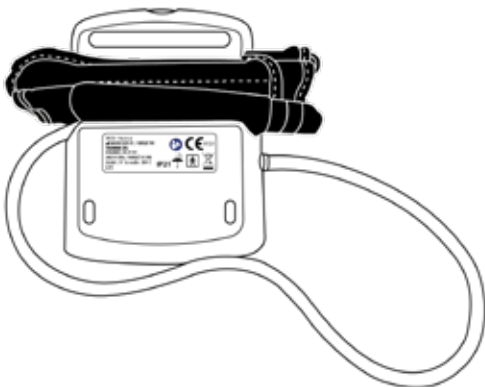
NOTE: In clock mode (sleep), the time will continuously be displayed on the screen.

3.5 Discontinuing a Measurement

If it is necessary to interrupt a blood pressure measurement for any reason (e.g. the patient feels unwell), the [ⓘ] button can be pressed at any time. The device then immediately lowers the cuff pressure automatically.

3.6 Storing the Wide Range Cuff

This device has a built-in cuff storage feature. When you are finished using the cuff for your readings, (being careful not to twist or bend any tubing in a way that could damage the cuff) roll the cuff up similar to how it was originally packaged, and insert it into the cutout on the back of the device.



3.7 Determining Your “Real” Average Blood Pressure at Home

It is normal for blood pressure to vary significantly in the middle of the day when most people are busy with their daily tasks. Hypertension Canada recommends measuring in the morning and evening to avoid variability.

At the end of a measurement, this instrument automatically stores each result, including date and time.



AM

Take: 2 measurements, **1** minute apart

- Empty bladder (If necessary)
- In the morning before breakfast, before taking medication
- Sit with back supported and measurement arm resting on a table. Sit with feet flat on the floor.



PM

Take: 2 measurements, **1** minute apart

- Empty bladder (If necessary)
- 2 hours after dinner, before taking medication
- Sit with back supported and measurement arm resting on a table. Sit with feet flat on the floor.
- Avoid coffee and smoking within the hour, and no exercise 30 minutes before measuring.



RESULTS

Discard Day 1 measurements.

Average your day 2-7 measurements

= Average

< 130/80 mmHg

= NO

No Hypertension

≥ 130/80 mmHg

= YES

Yes Hypertension

***Note: If the result is "borderline" repeat the series for confirmation. This data can be used by a medical professional to make a diagnosis of hypertension.**

3.8 Advanced BP Assessment Indicator

The bars on the left hand side of the display show you the range within which the indicated blood pressure value lies. Depending on the height of the bar, the readout value is either within the normal (green), Hypertension (yellow/orange) or danger (red) range.

The classification is based on standards adopted from the World Health Organization (WHO).

Refer to the chart below for details of the classification.

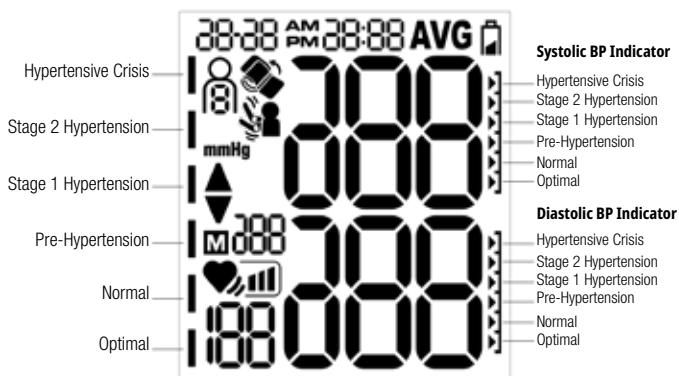
- If the bar lines up with the first or second green bar, your measurement is in the green zone, or "Normal".
- If the bar lines up with the third bar, it is in the yellow zone, and is considered elevated, or pre-hypertension.
- If the bar lines up with the fourth bar, it is in the red "Stage 1 Hypertension" zone.
- If the bar lines up with the fifth bar, it is in the red "Stage 2 Hypertension" zone.
- If the bar lines up with the sixth bar, it is in the red "Hypertensive Crisis" zone.

	SYS (mmHg)	DIA
Red	180 ▲	120 ▲
Red	140-179	90-119
Red	130-139	80-89
Yellow	120-129	70-79
Green	110-119	70-79
Green	▼110	▼70

For further information, see our website www.biosmedical.com.

In addition to the main BP Assessment Indicator bar on the left side of the display, this unit also breaks down the specific assessment of systolic and diastolic measurements.

Use the following figure to interpret your blood pressure.



3.9 Advanced Irregular Heartbeat Detection (IHB%)

This device is equipped with an in-depth irregular heartbeat detection feature. Along with showing whether or not an irregular heartbeat is potentially present during a reading, the averaging system will indicate the frequency of how often the irregular heartbeat indicator shows up.

An irregular heartbeat is defined as a heartbeat that varies by 25% from the average of all heartbeats during the blood pressure measurement. It is important that you are relaxed, remain still, and do not talk during measurements.

About IHB % Indication

The IHB % indicator is only enabled to display when reviewing average results of the readings in memory (all AVG, AM AVG and PM AVG).

Calculation of IHB %	Frequency of IHB
ALL AVG $\text{IHB \%} = \frac{\text{Number of detected IHBs in memory}}{\text{Total number of measurements}} \times 100\%$	 Normal
AM AVG $\text{IHB \%} = \frac{\text{Number of detected IHBs in latest 7 days (AM)}}{\text{Total number of measurements in latest 7 days (AM)}} \times 100\%$	 Irregular Heartbeat Indicator (frequency of IHB 0-24%)
PM AVG $\text{IHB \%} = \frac{\text{Number of detected IHBs in latest 7 days (PM)}}{\text{Total number of measurements in latest 7 days (PM)}} \times 100\%$	 Irregular Heartbeat Indicator (frequency of IHB 25-49%)
	 Irregular Heartbeat Indicator (frequency of IHB 50-74%)
	 Irregular Heartbeat Indicator (frequency of IHB 75-100%)

NOTE:

- If the [] icon appears frequently, we recommend contacting your physician or healthcare professional.
- The irregular heartbeat function does not replace a cardiac examination. It may however, help to detect potential heart rate irregularities at an early stage. Always consult your physician or healthcare professional to determine what next steps are best suited for your individual situation.
- The irregular heartbeat function is not designed for diagnosis or treatment of an arrhythmic disorder. Arrhythmia can only be diagnosed by a licensed physician or healthcare professional.

3.10 Viewing Previous Measurement Values

The blood pressure monitor automatically stores your measurements. It can store up to 240 measurements per user. When more than 240 measurements in a user's profile are present, the oldest readings are deleted to make space for the new ones.

1. To view the previously stored values, in standby mode press the [**M**] button to enter the memory mode.
The average blood pressure of all stored readings will be displayed first.
2. Press the [**>**] button to view the averaged AM readings from the last 7 days (5:00 - 9:00 a.m.)
3. Press the [**>**] button to view the averaged PM readings from the last 7 days (6:00 - 8:00 p.m.)
4. Press the [**>**] button to view the most recent measurement record.
5. Continue to press the [**>**] button to cycle through older measurements in the device.

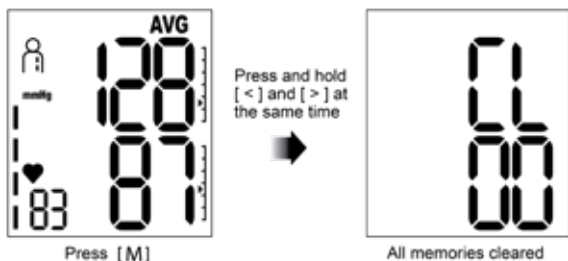
6. At any point, press the [**<**] button to view previous measurement records.

NOTE: See section 3.2 **Selecting the User**, to change the user profile to view alternate memory information.

NOTE: Blood pressure measurements are not stored when an error is encountered during measurement.

3.11 Clearing Measurement Values

1. Press the [**M**] button to enter into the user memory information.
2. With a reading showing, press and hold down the [**<**] and [**>**] buttons simultaneously for approximately 3 seconds until [**CL**] and [**00**] are displayed on the screen
3. All measurement data for the selected user has now been erased.



NOTE: If you only see [**CL**] and [**--**] displayed on the screen, it means the [**<**] and [**>**] buttons were not held long enough. Follow the instructions above again.

4. Error Messages/Malfunctions

Error	Possible Cause	Remedy
E 1	Pulse is unable to be detected due to incorrect cuff positioning.	Ensure that the cuff is being worn correctly, and that you have the cuff at the heart level.
E 2	Unnatural pressure impulses caused by arm movement during measurement.	Avoid unnecessary movement or talking. Rest and take another measurement.
E 3	Disruption during cuff inflation due to incorrect cuff positioning.	Ensure that the cuff is being worn correctly. Check that the cuff is correctly connected to the monitor.
E 4	Measurement error due to possible weak or irregular heartbeat.	Rest for a few minutes, then try to take another measurement after re-fastening the cuff to ensure correct positioning.

E 5	The cuff has overinflated.	Ensure cuff sizing is correct for your arm size.
E 6	The battery in the device is low.	Switch to AC adapter if available, or replace the batteries before attempting another measurement.

If problems occur when using the device the following points should be checked, and if necessary, the corresponding measures should be taken.

Malfunction	Remedy
The display remains empty when the device is switched on. The batteries are inserted.	1. Check batteries for correct polarity. 2. If the display is unusual, re-insert the batteries or exchange them for new ones.
The pressure does not rise even though the pump is running.	Check the connection of the cuff tube and connect properly if necessary.
The device frequently fails to measure the blood pressure values, or the values measured are too low or too high.	1. Check the positioning of the cuff. 2. Measure the blood pressure again, ensuring that you have remained motionless for a sufficient amount of time to ensure an accurate reading.
Every measurement produces varying results although the instrument functions normally and the values displayed are normal.	Note that blood pressure fluctuates continuously; therefore measurements will show some variability.
Blood pressure values measured differ from those measured by the doctor.	Record daily measurements for consultation with your doctor. Note: Individuals visiting their doctor frequently experience anxiety which can result in a higher blood pressure reading than at home.

For assistance call the **BIOS Medical Hotline: 1-866-536-2289**.

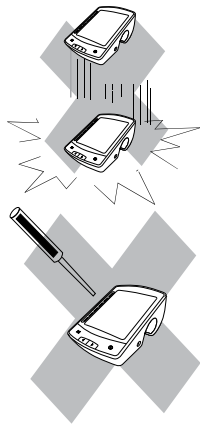
5. Care and Maintenance

- DO NOT** expose the device to either extreme temperatures, humidity, dust, or direct sunlight.
- The cuff contains a sensitive air-tight bubble. Handle this carefully and avoid all types of stress through twisting or buckling.
- Clean the device with a soft, dry cloth. **DO NOT** use gas, thinners, or



similar solvents. Dirt on the cuff should be removed with a damp cloth and soap. **DO NOT** put in the washing machine or dishwasher. **DO NOT** submerge in water.

- d) Handle the tube carefully. **DO NOT** pull on it. **DO NOT** allow the tubing to kink and keep it away from sharp edges.
- e) The monitor contains sensitive parts, and should be treated gently.
- f) Never open the monitor. This invalidates the manufacturer's warranty.
- g) Batteries and electronic instruments must be disposed of in accordance with the locally applicable regulations, not with domestic waste.



6. 5 Year Limited Warranty

This BIOS Diagnostics™ Blood Pressure Monitor has a 5 year limited warranty to be free of manufacturing defects for the life of the original owner. This warranty does not include the inflation system including the cuff and inflation bladder. The cuff is warranted for 1 year. The warranty does not cover damage from misuse or tampering.

100% Satisfaction Guarantee

If at any time, you are not completely satisfied with the performance of this device, call our BIOS Medical Hotline and speak with a customer service representative, who will make arrangements to have the device tested or replaced to your full satisfaction.

If you have questions regarding the operation of your monitor call the **BIOS Medical Hotline: 1-866-536-2289**.

Should correction be necessary, return the unit with all component pieces. Enclose proof of purchase and \$5.00 for return shipping and insurance. Ship the unit prepaid and insured (at owners option) to:

Thermor Ltd.

Returns Department
16975 Leslie Street
Newmarket, ON L3Y 9A1
www.biosmedical.com
Email: support@biosmedical.com

Please include your name, return address, phone number, and email address. Thermor will test or replace (at Thermor's option) free of charge any parts necessary to correct the defect in material or workmanship.

Please allow 10 days for return shipping.

7. Technical Specifications

Operating temperature:	5°C to 40°C/41°F to 104°F 15 to 90% relative maximum humidity
Storage temperature:	-25°C to 70°C/-13°F to 158°F Up to 90% relative maximum humidity
Operation, storage, and transport atmospheric pressure:	700hPa to 1060hPa
Dimensions:	110 x 154 x 77 mm
Weight:	465g (with batteries)
Measuring Procedure:	Non-invasive, Oscillometric method
Measurement Range:	Systolic Pressure: 50-250 mmHg Diastolic Pressure: 30-200 mmHg Pulse : 40-180 beats/minute
Cuff Pressure Display Range:	30 mmHg – 250 mmHg
Resolution:	Pressure: 1 mmHg Pulse: 1 bpm
Static Accuracy:	Pressure : +/-3 mmHg
Pulse Accuracy:	Pulse : +/-5% of reading
Voltage Source:	Battery: 4 x 1.5V AA batteries Optional Adapter: Input 100-240V, 50-60 Hz ; Output 6V@600mA
Battery Lifetime:	Approximately 300 measurements
Reference to Standards:	EN ISO 13485:2016 EN 1060-4:2004 ISO 81060-2:2013 EN 60601-1-2:2015 IEC 60601-1-2:2014 EN 60601-1-11:2015 IEC 60601-1-11:2015 EN 1060-3:1997 + A2:2009 IEC 80601-2-30:2009 + A1:2013 EN 80601-2-30:2010 + A1:2015



Read the instruction manual carefully before using this device, especially the safety instructions, and keep the instruction manual for future use.



Type BF applied part



Batteries and electronic devices must be disposed of in accordance with the locally applicable regulations, not with domestic waste.



IP21: Protected against solid foreign particles with a diameter of more than 12.5 mm. Provides protection against vertically falling drops of water or condensation.

BIOS | Medical
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THERMOR LTD.
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NEWMARKET, ON L3Y 9A1
MADE IN CHINA/FABRIQUÉ EN CHINE
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