

**MED-53**Automatic Upper Arm  
Blood Pressure Monitor**1. INTRODUCTION**

Thank you for purchasing the B.Well upper arm blood pressure monitor MED-53. Designed for convenient and easy operation, this device provides fast and reliable measurement of systolic and diastolic blood pressure as well as heart rate using the oscillometric measurement method.

The MED-53 is a fully automatic, digital, upper arm blood pressure measuring device.

**Important advantages of MED-53:**

- LCD backlight.
- Up-to-date Intellect Active technology uses oscillometric measurement during inflation for quick, precise and gentle result.
- Memory of 90 measurements.
- Traffic Light Indication according to European Society of Hypertension (ESH).
- The Pulse Arrhythmia Detection technology.
- Cuff position control.
- Date and Time.
- Fan-shape anatomical cuff for arm, washable.
- The possibility to use Micro USB adapter.

**2. CLASSIFICATION OF BLOOD PRESSURE VALUES**

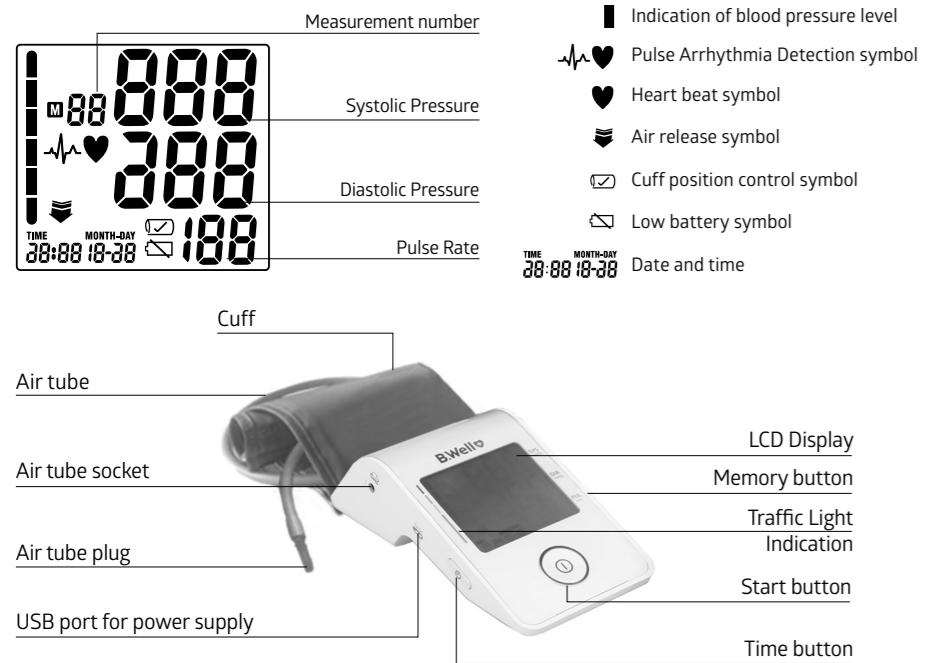
Table for classifying blood pressure values (mmHg) according to European Society of Hypertension (ESH)

Range	Systolic blood pressure	Diastolic blood pressure	Measures
Grade 3: severe hypertension	Higher or equal to 180	Higher or equal to 110	Urgently seek medical advice!
Grade 2: moderate hypertension	160-179	100-109	Consult your doctor immediately
Grade 1: mild hypertension	140-159	90-99	Consult your doctor
High normal	130-139	85-89	Consult your doctor
Normal	Lower than 130	Lower than 85	Self-check
Optimal	Lower than 120	Lower than 80	Self-check

**NOTE:** Show the measured values to your doctor. Never use the results of your measurements to change the doses of drugs prescribed by your doctor.

**3. CONTENTS AND DISPLAY INDICATORS**

Model MED-53

**4. INTENDED USE**

The digital automatic blood pressure monitor is suitable for home healthcare environment and is a non-invasive blood pressure measurement system intended to measure the diastolic and systolic blood pressures and pulse rate of an adult individual by using a non-invasive technique in which an inflatable cuff is wrapped around the upper arm. The cuff circumference is limited to 22 cm-42 cm.

**5. CONTRAINDICATION**

It is inappropriate for people with skin wounds on upper arms.

**6. PRECAUTIONS**

1. Before use, please read this instruction manual carefully.
2. In case of questions on the use of blood pressure monitor and resulting blood pressure values, please contact a doctor.
3. Keep MED-53 out of the reach of children.
4. Do not use MED-53 near anesthetic, flammable or oxygen mixture, or with nitrous oxide.
5. Do not forget: self-measurement means control, not diagnosis or treatment. Unusual values must always be discussed with a doctor. Under no circumstances a treatment should be altered or changed without a doctor's prescription.
6. The pulse display is not suitable for checking the frequency of heart pacemakers.
7. In cases of cardiac irregularity (I.H.B.), measurements made with this device should only be evaluated after consultation with a doctor.
8. Changes to the unit by the user are not admitted.
9. We recommend consulting a doctor before using the blood pressure monitor on patients with pre-eclampsia or during pregnancy.
10. The device does not require any calibration.
11. Tubing kinking can cause continuous cuff pressure and may result in blood flow interference and patient injury.
12. Too frequent measurements can cause injury to the patient due to blood flow interference.
13. Please note that, when inflating, the functions of the limb in question may be impaired.
14. During the blood pressure measurement, the blood circulation must not be stopped for an unnecessarily long time.
15. If the device malfunctions remove the cuff from the arm.
16. The user must check that the equipment functions safely and see that all its parts are in proper conditions before use.
17. Please always relax a minimum moment of 1-1.5 minutes between measurements to allow the blood circulation in your arm to recover. Prolonged over-inflation (cuff pressure exceed 300 mmHg or maintained above 15 mmHg for longer than 3 minutes) of the bladder may cause ecchymosis of your arm.
18. Consult your physician if you have any doubt about below cases:
  - 1) The application of the cuff over a wound or inflammation diseases;
  - 2) The application of the cuff on any limb where intravascular access or therapy, or an arterio-venous (A-V) shunt, is present;
  - 3) The application of the cuff on the arm of a mastectomy;
  - 4) Simultaneously used with other monitoring medical equipments on the same limb.
19. △ This automatic blood pressure monitor is designed for adults and should never be used on infants or young children. Consult your physician or other health care professionals before use on older children.
20. Do not use this unit in a moving vehicle. This may result in erroneous measurement.
21. Blood pressure measurements determined by this monitor are equivalent to those obtained by a trained observer using the cuff/stethoscope auscultation method, within the limits prescribed by the American National Standard Institute, Electronic or automated sphygmomanometers.
22. Information regarding potential electromagnetic or other interference between the blood pressure monitor and other devices together with advice regarding avoidance of such interference please see part ELECTROMAGNETIC COMPATIBILITY INFORMATION.
23. Please do not use the cuff other than supplied by the manufacturer, otherwise it may bring biocompatibility hazard and might result in measurement error.
24. △ The monitor might not meet its performance specifications or cause safety hazard if stored or used outside the specified temperature and humidity ranges in specifications.
25. △ Please do not share the cuff with other infective person to avoid cross-infection.

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

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

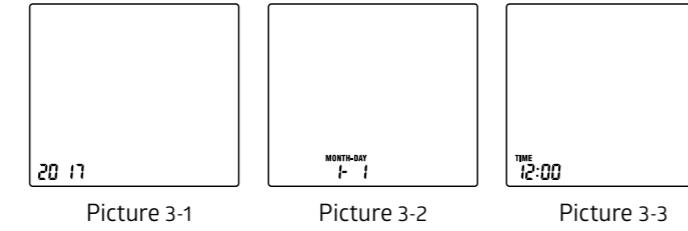
**7. SETUP AND OPERATING PROCEDURES****7.1. Inserting the batteries**

- a. Remove the battery cover from the battery compartment.
- b. Insert four AAA powerful batteries into the compartment and ensure each battery is in the proper direction.
- c. Replace the battery cover.  
△ After the low battery warning symbol "□" appears, the device is blocked until the batteries have been replaced. Please use "AAA" Long-Life 1.5 V batteries.
- d. Rechargeable batteries are not suitable for this monitor.
- e. Never leave any low battery in the battery compartment since they may leak and cause damage to the unit. If the blood-pressure monitor is left unused for long periods, please remove the batteries from the device.
- f. Avoid the battery fluid to get in your eyes. If it should get in your eyes, immediately rinse with plenty of clean water and contact a physician.
- ☒ The monitor, the batteries and the cuff, must be disposed of according to local regulations at the end of their usage.
- g. Using a mains adapter

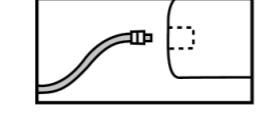
- 1) Plug the mains adapter into a 110-240 V, 50/60Hz power socket.
- 2) Plug the Micro USB plug into the USB port at the left side of the device. Micro USB port is for power supply only. The USB port can't be used for data downloading.
- 3) If you need an adapter, you may purchase it separately. B.Well recommends to use the B.Well Micro USB adapter for MED-53 device. Please use certified Micro USB adapters which output is 6V DC 600 mA.

**7.3. Setting time and date**

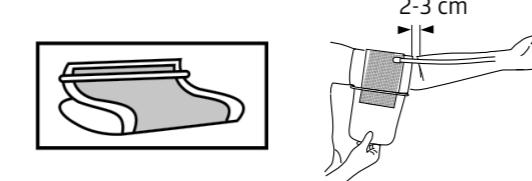
- a. Once batteries are inserted and device still in OFF mode, years digit blinks on the display. See picture 3-1.
  - b. Press "M" button to advance the year. If you keep the button depressed for more than 3 seconds, you can switch more quickly to the desired digit.
  - c. Press "Time" button to confirm and switch to the month value. See picture 3-2.
  - d. Press "M" button to advance the month.
  - e. Repeat the above described procedure to set day, hour and minutes. See picture 3-3.
  - f. At the end of the procedure, press "Time" button to confirm current setting and go in OFF mode.
- The display will now show clock and date. If you need to correct the time or date press and hold "Time" for 3 seconds until years digit blinks on the display. Every time batteries are changed, time and date settings are kept.

**7.4. Connecting the cuff to the monitor**

- a. Insert the Air tube plug firmly into the Air tube socket on the side of the monitor. Make certain that the Plug is completely inserted in order to prevent air leakage during use.
- △ Avoid compression or restriction of the connection tubing during measurement, which may cause inflation error, or harmful injury due to continuous cuff pressure.

**7.5. Applying the cuff**

- a. Remove any garment that fits closely to your upper arm.
- b. Pulling the cuff end through the metal loop (the cuff is packaged like this already), turn it outward (away from your body) and tighten it and close the Velcro fastener.
- c. Place a cuff around a naked hand 2-3 cm higher than an elbow pole. Arrange a cuff on a hand so that the red tag (Artery mark) is over an elbow pole.
- d. There must be no free space between the arm and the cuff. Clothing must not restrict the arm. Any piece of clothing which does (e.g. a pullover) must be taken off. The cuff has to cover densely a hand, otherwise the result of measurement will be the improper.

**7.6. Carrying out a measurement****Before the measurement:**

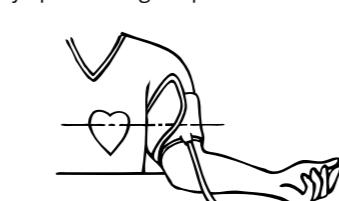
- Avoid eating, smoking as well as all forms of exertion directly before the measurement. All these factors influence the measurement result. Try and find time to relax by sitting in an armchair in a quiet atmosphere for about ten minutes before the measurement.
- Measure always on the same arm.
- Attempt to carry out the measurements regularly at the same time of day, since the blood pressure changes during the course of the day.

**Sitting Comfortably Measurement:**

- a. Be seated with your feet flat on the floor, and don't cross your legs.
- b. Place palm upside in front of you on a flat surface such as a desk or table. Make sure to be sit in a comfortably position with your arms extended and back leaning on the seatback.
- c. The middle of the cuff should be at the level of the heart. To avoid errors in the measurement, it is important to remain immobile during the measurement and in silence.

**Common sources of error:**

- Movement during measurement
- The arm artery lies considerably lower (higher) than the heart
- The cuff does not fit in size
- Loose cuff or sideways protruding air-pocket

**7.7. Taking your blood pressure reading**

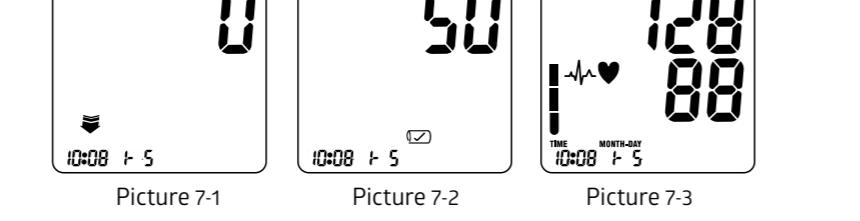
- a. After the cuff has been appropriately positioned, press "Start" button to start measure. "0" appears in "DIA" field: the monitor is ready for the measurement. See Picture 7-1.
- b. Cuff inflation starts and display shows increasing pressure values in "DIA" field. The "Cuff position control" symbol is displayed throughout the entire measurement. See Picture 7-2. If the cuff is applied too tightly or too loosely, then the Error symbol "E3" is displayed and the "Cuff position control" symbol is blinking.

- c. As the heartbeat is detected, the "Heart beat" symbol blinks and a beeping sound is generated at the same rhythm of the heartbeat. When the measurement is completed, cuff is deflated. The display shows the systolic / diastolic pressure and pulse. See Picture 7-3. WHO segments on the left of the display show pressure result according to WHO scale (see following dedicated paragraph for detailed explanation).

- d. After measurement, the monitor will turn off automatically after 1 minute of no operation. Alternatively, you can press the "Start" button to turn off the monitor manually.

During measurement, you can press the "Start" button to turn off the monitor manually.

NOTE: Please consult a health care professional for interpretation of pressure measurements.

**7.8. Pulse Arrhythmia Detection**

The appearance of the symbol "△" signifies that a certain pulse irregularity was detected during the measurement. The result can vary from your normal blood pressure. It is better to repeat the measurement. As a rule this is not a cause for concern; however, if the symbol "△" appears more frequently (e.g. several times per week on measurements performed daily) or if it suddenly appears more often than usual, we recommend you inform your doctor.

**7.9. Traffic Light Indication**

The colored bars on the left-hand edge of the display show the range within which the indicated blood pressure values lie. Depending on the height of the bar, the readout value is either within the normal (green), borderline (yellow and orange) or danger (red) range. If the values of systole and diastole fall into two different categories (e.g. systole in the High normal category and diastole in the Normal category), the graphical classification on the device always shows the highest category (e.g. High).

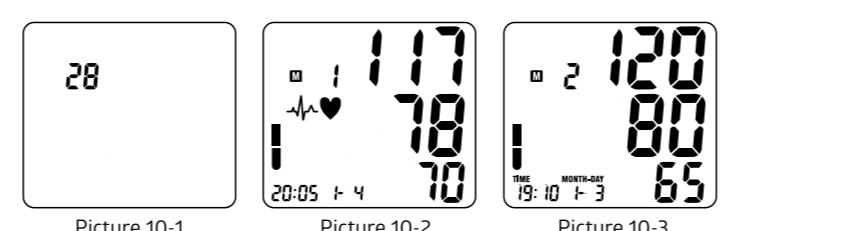
The classification corresponds to the 6 ranges in the Table as defined by the ESH and described on the table of the point 2. The recommendations of the European Society of Hypertension (ESH) allow to diagnose and treat the hypertension more effectively and do not contradict World Health Organization recommendations.

Please note that these standard values serve only as a general guideline, as the individual blood pressure varies in different people and different age groups etc.. it is important to consult your doctor regularly for advice.

Red Orange Yellow Green Green Green

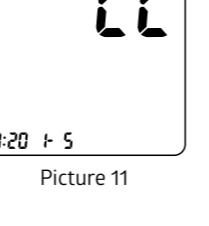
**7.10. Displaying stored results**

- a. In mode OFF, press "M" button to show saved values.
- b. The total number of registered measures is shown briefly on the display. See Picture 10-1.
- c. Then latest values measured are displayed. See Picture 10-2.
- d. By pressing "M" the last but one measure is shown. See Picture 10-3. Keep press the memory button for more than 3 seconds to scroll faster the recorded values.
- e. The device automatically switches off after one minute or by pressing "Start" button.

**7.11. Deleting measurements from the memory**

If you are sure that you want to permanently remove all stored values, press and hold down "M" button for 5 seconds until "CL" appears then release the button. See Picture 11. Press again "M" to reconfirm the choice and clean all the memories or "Start" button to exit the procedure and turn off the device.

After confirmation, "CL" icon is blinking and beeping sounds indicate successful clearance, then device switches off automatically. Individual values cannot be cleared.

**7.12. Technical alarm description**

The monitor will show "Error" on LCD with no delay if the determined blood pressure (systolic or diastolic) is outside the rated range specified in part SPECIFICACIONES. In this case, you should consult a physician or check if your operation violated the instructions.

**7.13. Troubleshooting (1)**

In case of error indication, follow the below recommended actions and press "Start" button to initiate another measurement:

PROBLEM	POSSIBLE CAUSE	RECOMMENDED ACTION
E1	Pulse was not correctly recorded	Movement can compromise the measurement. Loosen the clothes on the arm, relax for a moment and try again
E2	Inaccurate reading	
E3	The cuff is not correctly fastened	Re-apply the cuff and try again
E5	Pump pressure is too high	Relax for a moment and try again
E6	System error	Repeat the reading. If the problem persists, contact the Customer Service

**7.14. Troubleshooting (2)**

PROBLEM	POSSIBLE CAUSES	RECOMM
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