

DIAGNOSTIC[®]

EN

INSTRUCTION MANUAL



CE 0197

REF 5122

DM-200 IHB

AUTOMATIC UPPER-ARM
BLOOD PRESSURE AND
PULSE MONITOR

THANK YOU FOR BUYING THE BLOOD PRESSURE AND PULSE MONITOR DM-200 IHB.

The DM-200 IHB blood pressure monitor uses the oscillometric method for the measurement of systolic and diastolic pressure and pulse rate of an adult.



Before using the device, please carefully read this manual and retain it for possible future use. For detailed information about your blood pressure, YOU SHOULD CONSULT YOUR DOCTOR.

The device should be used solely for its intended purpose. Read all the instructions before use.

EXPLANATION OF SYMBOLS USED:


SYMBOL	FUNCTION/MEANING		
	Indication of battery polarity		Warning
	Symbol attesting compliance with the European Union Directive 93/42/ECC for medical devices		Direct current
			Serial number
			Manufacturing date
			Manufacturer
	Application part type BF		Date of the last revision
	Compulsory		Prohibited
SYS	Systolic blood pressure in mmHg		
DIA	Diastolic blood pressure in mmHg		
PUL./min	Pulse. Number of beats per minute.		
	Irregular pulse symbol		
	Symbol of pulse detected during reading		
	Product catalog number		
	Protect against moisture		
	Keep away from sunlight		
	Read the user manual before use		
IP22	Protection against solid objects exceeding the size of 12.5 mm (accidental touch by finger) Protection against drops of water falling on the enclosure at an angle of 15° relative to the normal position		

WARNINGS

	People with serious circulation problems may experience discomfort. Consult your doctor before use.
	If reading results are regularly outside the norm, contact your doctor. Do not attempt to treat the symptoms yourself without consulting your doctor.
	The product is designed for use only in accordance with its intended purpose. Do not use in any other manner.
	The product is not intended for children.
	Do not disassemble or attempt to repair the device yourself.
	Do not use the device near a cellular phone or other devices that generate strong electrical or magnetic fields, since it can affect the readings of the device.

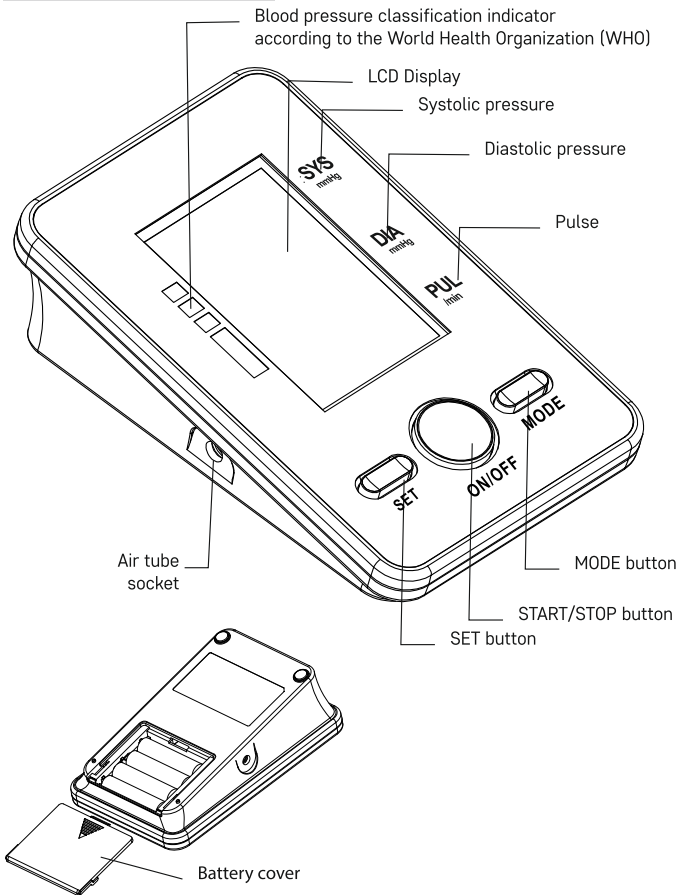
NOTE

Precautions regarding batteries

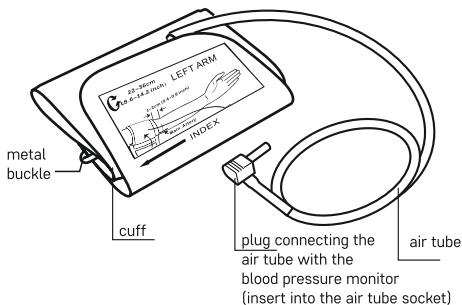
Do not mix old and new batteries.
Replace the batteries when the low battery indicator appears on the screen 
Insert batteries observing correct polarity indicated in the battery compartment.
Do not mix different types of batteries. It is recommended to use alkaline batteries of the long-life type.
If the device is not used for a period longer than 3 months, remove the batteries.
Batteries must be disposed of properly, according to local regulations.

PRESSURE MONITOR DESIGN

BLOOD PRESSURE MONITOR



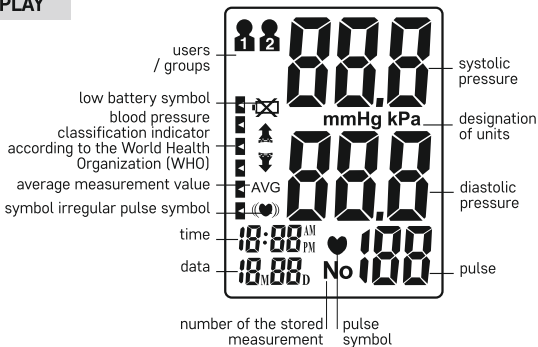
CUFF



NOTE

- ⚠ If the cuff is broken or not working, please install a new cuff.
- ⚠ If a new cuff needs to be used, the plug connecting the tube with the unit from the old cuff should be used.

DISPLAY



ELEMENTS OF THE



automatic
blood pressure



cuff size
22-36 cm (M.)



battery
AAA (1.5V)
4 pieces



case



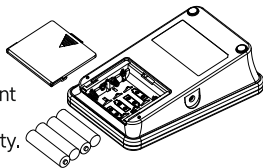
user manual
+ warranty

IMPORTANT NOTES ON TAKING MEASUREMENTS

1. For 30 minutes prior to the measurement it is advisable to avoid eating, exercising or taking a bath.
2. Before taking blood pressure one should sit in a quiet environment for at least 5 minutes.
3. Do not stand during the measurement. Sit in a comfortable position while holding the arm evenly in relation to heart.
4. During the measurement, do not talk or move.
5. During the measurement, avoid strong electromagnetic interference, for example, from microwave oven or cellular phone.
6. Prior to the next reading, wait for at least 3 minutes.
7. Try to measure blood pressure at the same time every day in order to maintain consistency.
8. Comparison of the measurements is possible only when the readings were performed on the same arm, in the same position and at the same time of day.
9. The blood pressure monitor is not recommended for people with severe arrhythmia.
10. Do not use the device if it is damaged.

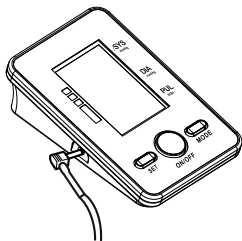
BATTERY INSTALLATION AND REPLACEMENT

1. Remove the battery cover from the battery compartment (according to the direction shown on the cover).
2. Insert 4 new AA batteries into the compartment and make sure that all the batteries are correctly installed observing the correct polarity.
3. Reinstall the battery cover. The cover will be closed properly when you hear a click.



WRAPPING THE CUFF

1. Insert the air tube in the air tube socket on the left side of the device.
2. Insert the end of the cuff under the metal buckle, with the velcro facing out.



3. Wrap the cuff approximately 1-2 cm above the elbow. For best results, wrap the cuff on bare skin, at heart level.
4. The compression of arm caused by tucked up sleeve may prevent accurate reading.

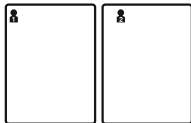


HOW TO USE THE DEVICE

GROUP / USER SELECTION

With the power supply turned off, press the **SET** button, to enter device settings. The memory group icon starts blinking.

1. Select the memory group In the device settings mode, you can record the measurement results in 2 different groups. This allows 2 users to record individual measurement results (up to 60 per group). Press the **MODE** button to select the group. Measurement results are automatically stored in each selected group.



2. Time/date settings

Press the **SET** button again to enter the date/time mode. Set the month using the **MODE** button. Press the **SET** button again to confirm the given month. Set the day, hour and minute in the same manner. After pressing the button **SET** each time, the selection will be approved and move to the next element (month, day, hour, minute).

3. Saved settings

To turn off the device in any setting mode, push the ON/OFF button.



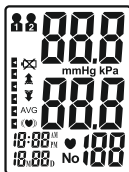
NOTE

If the device stays idle for 3 minutes, it will automatically save all the information and turn off.

MEASUREMENT

TURN ON THE POWER

Press and hold the ON/OFF button until you hear a long beep. All symbols will appear on the screen for 1 second, and the unit will carry out a display test. The device is ready for use.



REMEMBER

If there is air remaining in the cuff from the previous measurement, the device will not work. The symbol will flash on the screen, until the pressure in the cuff is equalized.

INCREASING PRESSURE

First, the cuff is inflated up to the initial pressure. If the systolic pressure of the current user is higher than 190 mmHg, the device will automatically change the inflation to the proper level.



NOTE

Increasing the pressure will gradually slow down and stop when the cuff is not properly wrapped on the arm. In such a case, you need to correctly wrap the cuff and continue by pressing the ON/OFF button and turn off the device.

MEASUREMENT

After the cuff is inflated, the air will be slowly released, in accordance with the pressure monitor reading. Simultaneously, the symbol ♥, will flash on the display, indicating heart rhythm.

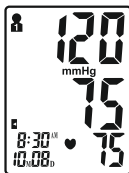


REMEMBER

During the measurement, you should remain relaxed. Do not talk or move.

DISPLAYING RESULTS

After the end of the measurement, there will be three short beeps. The screen will display the measurement values for systolic and diastolic pressure. The indicator of current measurement will be shown next to the appropriate category according to the WHO classification.



NOTE

Details on the classification of blood pressure according to WHO can be found on page 12.

IRREGULAR HEART RATE INDICATOR

If the pressure monitor detects irregular heart rhythm two or more times during the measurement, together with the measurement results the indicator of irregular heart rate will appear on the screen "(♥)". Irregular heart rate is the one that is 25% slower or faster than the average rhythm measured when taking a reading of systolic and diastolic pressure. If irregular heart beat indicator "(♥)" frequently appears together with results, you should consult your doctor.

DELETING / SAVING MEASUREMENT RESULTS

You can remove your current measurement results, due to the unfavorable conditions of measurement or for another reason. To delete the result of the last reading, after the result is displayed, press **SET**. If the result is not removed, it will be automatically saved along with the date, in the memory group set earlier.

REMEMBER

Before the measurement, make sure that the appropriate memory group was selected.

If the number of measurements exceeds the permissible amount of 60 per group, the latest measurements are displayed first, and the oldest will be deleted. **TURNING OFF**

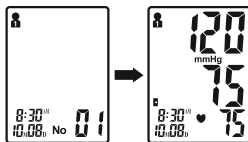
The ON/OFF button is used for turning off the device in any mode. The device turns off automatically after approximately 3 minutes of inactivity.

REMEMBER

If the pressure in the cuff reaches excessive level, press the ON/OFF button to switch the unit off. After turning off, the air will be quickly removed from the cuff.

CHECKING MEMORY

With the power off, using the "MODE" button, you can check the results of earlier measurements. The result of the latest and the oldest measurement can be displayed by pressing and holding the "MODE" button. When you turn on the results of these measurements, press the "MODE" button to scroll through all the results of the measurements in the memory.



REMEMBER

Only the results of previous measurements in the last used memory group will be displayed. To see the results of measurements in other groups, first select the desired group, and then turn off the pressure monitor.

DELETING MEMORY

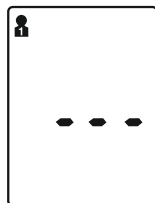
The memory for the selected group may be deleted in the memory check mode. Press **SET** and hold the button for about 3 seconds to delete all the entries in the memory for the selected group. The device will emit a short beep, confirming successful operation and then it will go into the measurement mode. Press the ON/OFF button to turn off the device.

NOTE

The deleted data cannot be restored.

AVERAGE OF LAST 3 MEASUREMENTS

With the device turned off, press the MODE button to activate the screen. After conducting internal tests, the screen will display the results of 3 most recent readings in the last used group. Together with the corresponding WHO blood pressure indicator, the symbol will be displayed **AVG**. To go to the memory check mode press MODE. To check the average results from other groups, select the desired group before pressing the MODE, with the device turned on. (See "Group/user selection" on page 6.)

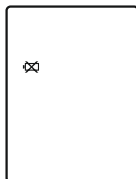


REMEMBER



In this mode, you can go to test mode by pressing the MODE button.

LOW BATTERY INDICATOR

When the device is running out of battery, it will not be able to properly inflate the cuff and signals the fact with 4 short beeps. About 5 seconds before switching off the "⊗" symbol appears. At this time you should replace the batteries. This operation will not cause a memory loss.



PROBLEM SOLVING

PROBLEMS	POSSIBLE CAUSE	SOLUTION
Blood pressure is beyond the typical range.	The cuff is too tight or improperly wrapped on the arm.	Place the cuff 1-2 cm above the elbow (see page 6).
	Invalid measurement due to body or pressure monitor movements.	Sit in a relaxed position with the arm close to the heart. During the measurement, do not talk or move. Ensure that during the measurement the device is in a fixed position.
Display 	The cuff has not been properly inflated.	Make sure that the plug connecting the air tube with the device is properly inserted.
	Incorrect operation.	Thoroughly read the user manual and repeat the measurement..
	The pressure during inflation exceeded 300mmHg.	Thoroughly read the user manual and repeat the measurement.
	Exhausted battery symbol	Replace all batteries. Do not use rechargeable batteries..

DECLARATION AND MANUFACTURER INFORMATION - ELECTROMAGNETIC IMMUNITY

The DEVICE is intended for use in the electromagnetic environment as described below.
The customer or the user of the DEVICE should make sure that it works only in such an environment.

Immunity tests	Test level IEC 60601	Fulfilled level	Electromagnetic environment - information
Electrostatic discharge (ESD) in accordance with IEC 61000-4-2	+/- 6kV touch discharge +/- 8kV air discharge	+/- 6kV touch discharge +/- 8kV air discharge	Floors should be wooden, concrete or made of ceramic tiles. If floors are covered with synthetic material, the relative humidity should be at least 30%.
The magnetic field of the mains in accordance with IEC 61000-4-8			Mains frequency magnetic field should be at the level characteristic of a regular positioning in commercial or hospital environment.

BLOOD PRESSURE INFORMATION

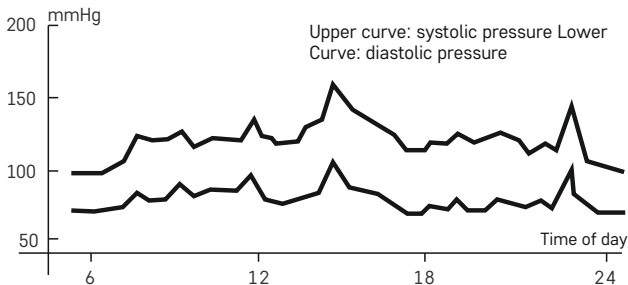
BLOOD PRESSURE

Blood pressure is the force of blood pushing on artery walls. It is usually measured in millimeters of mercury (mmHg). Systolic pressure is the maximum pressure exerted on blood vessel walls at each contraction of the heart. Diastolic pressure is the pressure exerted on blood vessels when the heart is expanded, between beats.

A person's blood pressure often changes during the day. The excitement and tension may result in an increase in pressure, while drinking alcohol and taking a bath cause pressure decrease. Some hormones, such as adrenaline (which is released by the body under stress) may cause narrowing of blood vessels, which leads to increased pressure.

BLOOD PRESSURE FLUCTUATIONS

Blood pressure may vary up to 30-50mmHg per day. In people with hypertension, these fluctuations may be even higher. Blood pressure rises during physical or mental effort and reaches its lowest value during sleep. It is best to make measurements at the same time every day. Repeated measurements give the accurate pressure image. When saving measurement results it is necessary to save the correct date and time of the measurement.



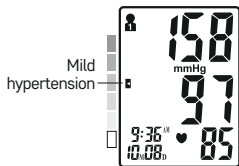
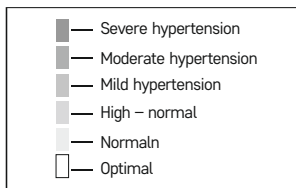
Example: variations during the day (male, 35)

BLOOD PRESSURE INFORMATION

PRESSURE CLASSIFICATION INDICATOR ACCORDING TO WHO

It DM-300 IHB is equipped with blood pressure classification indicator on the basis of the guidelines of the World Health Organization (WHO).

The illustration below shows measurement results (color-coded on the monitor screen).

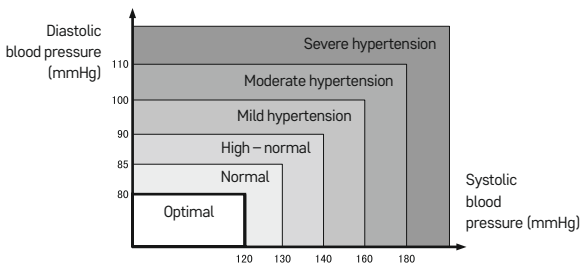


■ Blood pressure classification indicator

WHAT IS HYPERTENSION AND HOW TO CONTROL IT?

Hypertension is abnormally high blood pressure. You should regularly control blood pressure in order to detect hypertension as soon as possible, because disregarded may become the cause of serious diseases such as heart attack or stroke.

To prevent overpressure, or reduce it: do not smoke, limit your intake of salt and fat, avoid stress, keep the correct weight, regular exercise.



Do not be overly concerned by the result of one measurement.

REMEMBER

A better indication of the blood pressure of the particular person is ensured by taking readings two or three times, at the same time of day, for a long time, which enables you to learn your normal blood pressure. If reading results are outside the norm, contact your doctor.

BLOOD PRESSURE

WHAT IS THE DIFFERENCE BETWEEN BLOOD PRESSURE MEASUREMENT AT HOME AND MEASUREMENTS MADE IN THE DOCTOR'S OFFICE?

Pressure measurements in hospital or doctor's office may cause anxiety (also called "white coat hypertension") and result in pressure increase up to 2530 mmHg in comparison with measurement made at home. Measurement at home reduces any external influences, complements the measurements made by a doctor and provides a more accurate history of blood pressure.

WHAT IS THE CAUSE OF DIFFERENT READINGS?

Blood pressure varies throughout the day. A number of factors, such as diet, stress, incorrect cuff wrapping, etc. may affect blood pressure.

THE CUFF SHOULD BE PUT ON RIGHT OR LEFT ARM? WHAT IS THE DIFFERENCE?

You can use any arm for measurement, however, in the case of comparing the results, the same arm must be used. Measurement on the left arm is more precise, because it is closer to the heart.

WHAT IS THE BEST TIME TO TAKE MEASUREMENTS?

Any time when you feel relaxed and do not experience stress.

REMEMBER

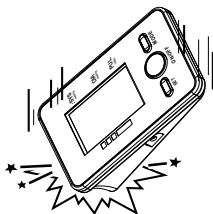
Incorrect measurement results may be caused by:

incorrect cuff wrapping (make sure that the cuff is not too tight or too loose. Make sure that the bottom part of the cuff is placed approximately 1-2 cm above the elbow),

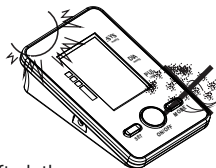
incorrect body posture (remember to keep upright position),

feeling anxiety or nervousness (take 2-3 deep breaths, wait for a few minutes and repeat the measurement).

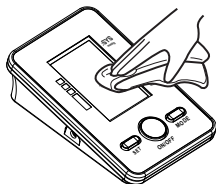
MAINTENANCE



Avoid dropping, hitting, or throwing the device.



Avoid extreme temperatures.
Do not expose the device to direct sunlight.



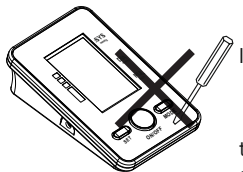
To clean the device, use a soft cloth and gently wipe with a mild detergent. Use a damp cloth to remove dirt and detergent residues.

Cleaning the cuff: Do not wash the cuff in water! To clean the surface, use a soft cloth moistened with some disinfecting alcohol. To wipe use a damp cloth (moistened with water). Dry the cuff in the air at room temperature.

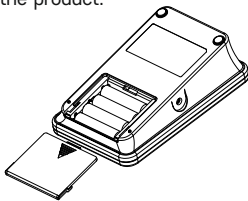


Do not use gasoline, thinners or similar solvents.

If the device is not used for an extended period of time, remove the batteries.



Do not disassemble the product.



It is recommended to control the operation of the device every 2 years

TECHNICAL DATA

Product Description	Arm- type fully automatic digital blood pressure monitor	
Model	DM-200 IHB	
Display	LCD Digital Display	
Measuring Method	Oscillometric Method	
Measurement Range	Pressure	0-300 mmHg
	Pulse	30-180 Pulses/min
Accuracy	Pressure	±3 mmHg
	Pulse	±5%
Inflation	Automatic by Internal Pump	
Memory Function	Memory 2x60 Sets of Measurement Values	
Function	Irregular heart beat detection	
	WHO clasification Indicator	
	Last 3 results average	
	Low battery detection	
	Automatic power-off	
Power Source	4XAAA 1,5 V Alkaline Batteries	
Battery life	Approx. 2 months at 3 tests per day	
Main Unit Weight	Approx. 405g (Batteries not included)	
Unit dimensions	Approx. 139mm x 88mm x 42 mm (length x width x height)	
Cuff	Soft Arm Cuff (22-36 cm)	
Operating Environment	Temperature	10 - 40°C (50 - 104°F)
	Humidity	15-90% RH
Transport and Storage Environment	Temperature	-20 - 55°C (-4 - 131°F)
	Humidity	15 - 90% RH
Classification	Internal power equipment, type BF, cuff is the applied part	
Ingress Protection Rating	IP 22	

SPECIFICATION

This blood pressure monitor complies with European regulations and bears the mark CE (0197). This blood pressure monitor is also compatible with the following standards:

SAFETY STANDARDS:

EN 60601-1 medical electrical equipment - Part 1: General requirements for safety

EMC STANDARD:

EN 60601-1 Medical electrical equipment - Part 1-2: General requirements for safety - Collateral standard - Electromagnetic compatibility - Requirements and tests

PERFORMANCE STANDARDS:

EN 1060-1 Non-invasive sphygmomanometers - General requirements,

En 1060-3 non-invasive sphygmomanometers-supplementary requirements for electromechanical blood pressure measuring systems

En 1060-4 Non-invasive sphygmomanometers - test procedures to determine the overall system accuracy of automated non-invasive sphygmomanometers,

CORRECT DISPOSAL OF THIS PRODUCT

(Waste electrical and electronic equipment)



This marking on the product or its related materials indicates that it should not be disposed of with other household waste at end of life.

The worn out product should be taken to a waste collection facility. Contains components that are dangerous for the environment. The correct disposal of the device allows to preserve valuable resources and avoid negative effects on health and the environment, which may be threatened by inappropriate handling of waste.

Business users should contact with their suppliers and check the terms and conditions of purchase agreements. This product should not be mixed with other waste from business activities. This product does not contain hazardous materials.

WARRANTY

The DM-200 IHB blood pressure monitor is covered by a 2-year warranty starting from the purchase date. If the device does not work properly, due to damaged elements or defective manufacturing, we will repair it or replace it for free. This warranty does not cover damage to the pressure monitor resulting from improper operation. For detailed information please contact Diagnosis.

NOTES

NOTES



Diagnosis S.A.
ul. Sienkiewicza 82, 15-005 Białystok
tel./fax 85 732 46 22, 732 40 99
www.diagnosis.pl



store stamp and signature of salesperson

WARRANTY CARD

DEVICE NAME

MODEL

SERIAL NUMBER

DATE OF SALE

WARRANTY TERMS

1. Diagnosis S.A. grants a warranty:
 - 24 months for DIAGNOSTIC blood pressure monitors and cuffs (excluding pump assembly)
 - 12 months for nebulizer and pressure monitor accessories

Hardware defects revealed during the warranty period will be rectified free of charge within 21 days. The term runs from the date of delivery of the equipment to the service center.

2. The purchaser shall be entitled to replace the equipment for a new one, free of defects, when:
 - the repair has not been made within the time limit set in item 1
 - an authorized service center found an irreparable manufacturing defect
 - during the warranty period, 4 repairs were effected, and the equipment still shows defects that prevent its use in accordance with its intended purpose.

The concept of repair shall not include operations related to equipment check and cleaning.

3. The warranty shall not cover: batteries, products with illegible or damaged serial number, damage due to the operation and storage inconsistent with the user manual, ingress of liquids or foreign bodies, overvoltage of mains, repairs by unauthorized persons and random events.
4. Faulty equipment should be delivered by the buyer to the address of the main service center or one of the Authorized Service Centers (listed in the appendix).
5. The warranty for the sold consumer goods shall not exclude, restrict, or suspend the powers of the buyer resulting from non-conformity of the goods with the contract.
6. The only basis for the warranty rights shall be the warranty card with the date of sale, stamp and signature of the salesperson. If the card is not completed, filled in wrongly, with traces of corrections and entries made by unauthorized persons, illegible as a result of damage - it shall be invalid.