www.wunder.it

PROFESSIONAL ELECTRONIC BODY COMPOSITION

MOD. WBA300

⚠ **Read this manual carefully before using the instrument**

INDEX

By choosing the **WUNDER** mod. **WBA** professional electronic scale, you have purchased a high precision instrument. Since over 40 years **WUNDER** has placed its experience at the service of health.
The instrument is characterized by the possibility of fixing the electronic terminal to the weighing platform by means of a column or else installing the terminal autonomously.
The instrument is equipped with a dual LCD electronic terminal with triple reading to simultaneously view Weight, Height. and BMI

1. GENERAL RULES

⚠ **Carefully read this manual before using the instrument as it supplies important indications concerning OPERATING SAFETY AND MAINTENANCE.**

The descriptions and illustrations supplied in this manual are not binding.
WUNDER reserves the right to modify its products as deemed convenient in order to approve them without being committed to update this publication.

Conventions:
The following symbols have been used in this manual:

⚠	**ATTENTION!** PLACED BEFORE DETERMINING PROCEDURES. COMPLIANCE FAILURE CAN HARM THE OPERATOR OR PATIENT OR DAMAGE THE PRODUCT		
	WASTE DISPOSAL IN COMPLIANCE WITH 2012/19/UE DIRECTIVE		
	TYPE B PARTS SUPPLIED		BATTERY POWER
▼	INDICATION OF WEIGHT FUNCTIONALITY	→0←	INDICATION OF STABLE WEIGHT
	POSSIBLE INTERFERENCES NEAR THE INSTRUMENT		DUAL INSULATION (CLASS II)
	READ THIS MANUAL CAREFULLY BEFORE USING THE INSTRUMENT		
	MANUFACTURER: WUNDER SA.BI. SRL – VIA VECCHIA PER MONZA, 20 – TREZZO S/ADDA (MI), ITALY		

1.1 INTENDED USE

Environment of use: The installation room must be equipped with an electrical system that complies with the regulations in force. It is recommended to use the device in environments not exposed to magnetic interference.
Limitations of use: this medical device can only be used as described in this manual
Useful life of the product: 7 years

2. SAFETY

⚠ ATTENTION!

Operators must read this manual carefully, comply with the instructions it contains and become familiar with the correct use and maintenance procedures of the instrument.

The manufacturer denies all liability for any direct or indirect damage, including loss of profits, or any other commercial damage due to misuse of the product and failure to comply with the instructions given in this manual.

People with pacemakers and other medical devices internal.

Note that people with an electronic medical implant, such as a pacemaker, should not use WBA, as it passes a low-level electrical signal through the body, which may interfere with its operation.

For the use of the instrument by persons with disabilities, it is recommended to include qualified assistance. Keep the instrument out of the reach of children.

The body composition analyzer should be used with bare feet.

Be sure to clean the weighing platform with appropriate disinfectant after each use.

Do not pour any liquid directly on the weighing platform, to avoid damaging it.

To clean the platform, use a soft cloth moistened with ethyl alcohol.

Avoid the use of harsh chemicals, excessive amounts of water or high pressure washing systems.

When cleaning, always remove the power cable, avoid touching it with wet hands.

- Retain this manual for consultation and as a help in staff training
- Do not overload the instrument beyond its maximum capacity
- Do not apply loads abruptly.
- Do not press the keys with sharp or pointed objects
- Do not try to open the instrument.
- Do not remove seals from the instrument.
- Do not short-circuit the battery terminals
- Use only the power supply provided by Wunder. Before using it, make sure that the local mains voltage is compatible with the voltage of the adapter shown on the identification plate
- Regularly check the integrity of the instrument's power cord and make sure it does not come in contact with hot appliances
- Make sure that the power cord does not create obstruction hazards
- Unplug the instrument before cleaning it
- Do not place the instrument in water or other liquids
- Perform maintenance and subsequent metric verifications regularly

2.2 ELECTROMAGNETIC IMMUNITY

The **WBA** model Personal Weighing Scales is intended for use in the electromagnetic environment specified below. The customer/user must ensure that it is used in such an environment.

Guide and Statement of manufacturer – Electromagnetic emissions		
Emission test	**Conformity**	**Electromagnetic environment guidance**
RF Emission **CISPR11**	Group 1	The **WBA** model personal weighing scale uses RF energy only for its internal function. Therefore, RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emission **CISPR11**	Class B	The **WBA** model personal weighing scale is suitable for use in all healthcare and hospital buildings connected to the public low-voltage power supply network.
Harmonic emission **IEC 61000-3-2**	Class A	
Voltage fluctuations / flicker emissions **IEC 61000-3-3**	Compliant	

Guidance and manufacturer's declaration - Electromagnetic Immunity		
Immunity test	**IEC 60601 Compliance level**	**Electromagnetic environment guidance**
Electrostatic discharges (ESD) **IEC 61000-4-2**	± 8 kV contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	The floors should be made of wood, concrete or ceramic. If the floors are covered in synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst **IEC 61000-4-4**	± 2kV for power supply lines ± 1kV for input/output lines	The power supply should be of the type used typically in commercial or hospital environments.
Surge **IEC 61000-4-5**	± 1kV line(s) to line(s) ± 2kV line(s) to earth	The power supply should be of the type used typically in commercial or hospital environments.
Voltage dips, short interruptions and voltage variations on power supply input lines **IEC 61000-4-11**	0% U_T for 0.5 cycle 0% U_T for 1 cycle 70% U_T (30% dip in UT) for 25 0% U_T for 5 cycles	If the user needs continuous operation of the instrument, it is recommended to power the instrument from an uninterruptible power supply or a battery. **Note:** UT is the value of the supply voltage.
Power frequency (50, 60 Hz) Magnetic field **IEC 61000-4-8**	30 A/m	The mains voltage quality should be that of a typical commercial or hospital environment.

<table>
<tr><th colspan="3">Manufacturer's guide and declaration - Electromagnetic emissions</th></tr>
<tr><th>Immunity test</th><th>IEC 60601 Compliance Level</th><th>Electromagnetic environment-guidance</th></tr>
<tr><td>Conducted RF
IEC 61000-4-6</td><td>3Vrms 150kHz to 80MHz (for appliances that are not life supporting)</td><td rowspan="2">Portable and mobile RF communications equipment should be used no closer to any part of the product including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.
Recommended separation distance
d = 1.2 √ P
d = 1.2 √ P from 80 MHz to 800 MHz
d = 2.3 √ P from 800 MHz to 2.5 GHz
P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey[1], should be less than the compliance level in each frequency range[2]. Interference may occur in the proximity of equipment marked with the following symbol:
  </td></tr>
<tr><td>Radiated RF
IEC 61000-4-3</td><td>3 V/m
80MHz to 2,7 GHz
(for appliances that are not life equipment)</td></tr>
<tr><td colspan="3">[1] From 80 MHz to 800 MHz is applied the higher frequency range.
[2] These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.
a) The intensity of the field for fixed transmitters such as base stations for radio, mobile and cordless phones and land radio mobile, amateur radio, radio transmitters in the AM and FM and TV transmitters cannot be predicted theoretically with accuracy. To establish an electromagnetic environment due to fixed RF transmitters, it should consider the electromagnetic survey of the site. If the field strength measured at the place where you use the instrument exceeds the applicable level of compliance of the above, the device should be observed to verify normal operations. If you notice abnormal performance, it may take additional measures such as a different orientation of the device or re-locate it.
b) The field strength over a frequency range of 150 kHz to 80 MHz should be less than 3 V/m.</td></tr>
</table>

Recommended separation distance between WBA and mobile/portable RF communication equipment			
The **WBA** model personal weighing scale is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The product user can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the product as recommended below.			
Output power rating of the transmitter (W)	**Separation distance according to frequency of transmitter (m)**		
	150 MHz - 80 MHz d=1,2 √P	**80 MHz to 800 MHz d=1,2 √P**	**800 MHz to 2,5 GHz d=2,3 √P**
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23
For transmitters with maximum rated power output not reported above, the recommended separation distance **d** in meters (m) can be calculated using the equation applicable to the frequency of the transmitter, where **P** is the maximum rated power output of the transmitter in Watt (W) according to the manufacturer of the transmitter.			

3. INDICATOR

1. Function keys

2. Numeric keyboard

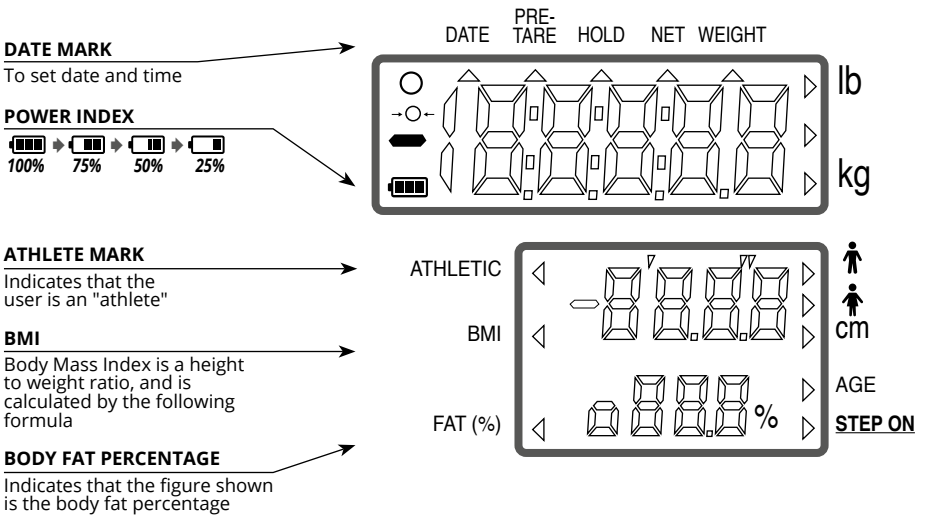
3. 1° LCD: Weight

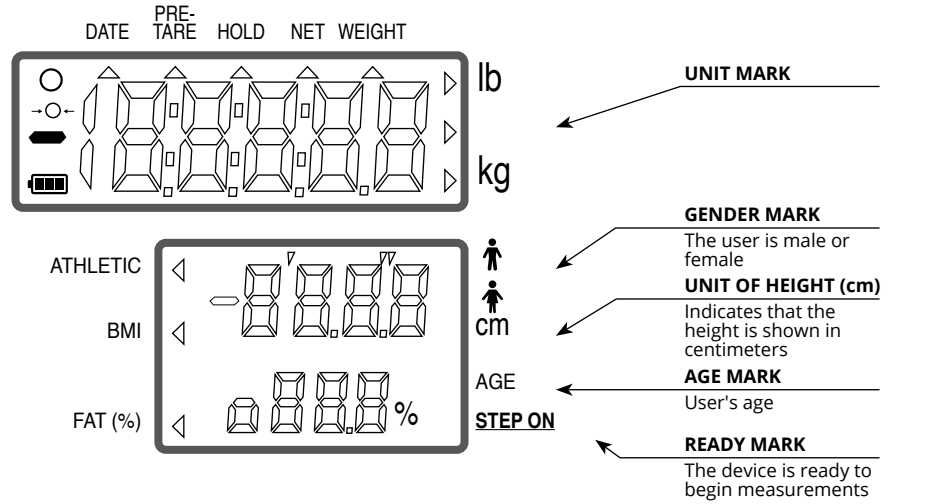
4. 2° LCD: BMI - Height

5. Power indicator

KEYBOARD

KEY	NAME	DESCRIPTION
	**[ON/OFF]**	On/Off key. Pressed for 3 seconds it switches off the scale.
	**[ZERO]**	Indication reset (within ±2% of the capacity)
	**[PRINT]**	Printer Data
	**[WOMEN]**	Sex female
	**[MAN]**	Sex Male
	**[ATHLETIC]**	ATLHETIC MODE: "means a person subject to intense physical activity for at least 12 hours a week and with a resting heart rate of 60 beats per minute or less. They are also considered athletic people if for some years they have practiced sport and they currently exercise less than 12 hours per week.
	**[TIME]**	Time setup
	**[PRETARA]**	Tare Function of unwanted weight (clothes, etc ...). Function net weight.
	**[CANC]**	Data Cancel
	**[ENTER]**	ENTER key
0-9	**[0] ... [9]**	Numeric keyboard for entering data


DATE MARK
To set date and time
POWER INDEX
100% 75% 50% 25%
ATHLETE MARK
Indicates that the user is an "athlete"
BMI
Body Mass Index is a height to weight ratio, and is calculated by the following formula
BODY FAT PERCENTAGE
Indicates that the figure shown is the body fat percentage
DATE
PRE-TARE
HOLD
NET
WEIGHT
lb
kg
ATHLETIC
BMI
FAT (%)
%
cm
AGE
STEP ON


DATE
PRE-TARE
HOLD
NET
WEIGHT
lb
kg
ATHLETIC
BMI
FAT (%)
%
cm
AGE
STEP ON
UNIT MARK
GENDER MARK
The user is male or female
UNIT OF HEIGHT (cm)
Indicates that the height is shown in centimeters
AGE MARK
User's age
READY MARK
The device is ready to begin measurements

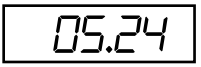
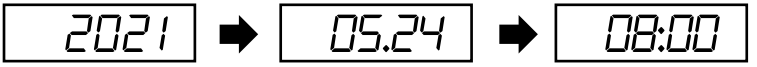
4. USABILITY

1. Make sure to place the instrument on a flat and stable surface away from heat sources, in an environment free of excessive vibrations and air currents.
2. Level the instrument to ensure correct measurement.
3. Connect the instrumentation to the socket with the external adapter supplied.
4. Turn on the balance with the ⏻ button and make sure the weight display indicates 0.0kg.
5. Have the patient stand on the electrodes with bare feet, keeping the heels and soles of the feet firmly positioned on the electrodes so that weight and body analysis are measured correctly.

5. INSTRUCTION FOR USE

5.1 DATE AND TIME SETTING

Keep the TIME key pressed for 3 seconds to access TIME SETTING programming, starting with the flashing digit of the upper line use the numeric keypad to enter the correct data.
Example: programming of 24th May 2021, 8:00 a.m.

	**YEAR SETTING:** Use the numeric keys to enter the correct value, press TIME to access the next step once correctly set.
	**DATE SETTING:** Use the numeric keys to enter the correct value, press TIME to access the next step once correctly set.
	**TIME SETTING:** Use the numeric keys to enter the correct value, press TIME to access the next step once correctly set.
 Display Format YYYY → MM.DD → HH:SS	

⚠ **ATTENZIONE!**

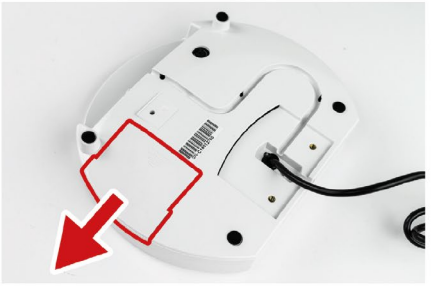
To save, press and hold the TIME button for a few seconds until the confirmation beep sounds.

5.2 OTHER SETTINGS

1. Press and hold the key →○← for 3/5 seconds to access programming
2. The display shows "SETUP" and then "A OFF"
3. Enter 'PRE-TARE' or →○← to select the required function
4. Enter 'TIME' to access, confirm the desired function

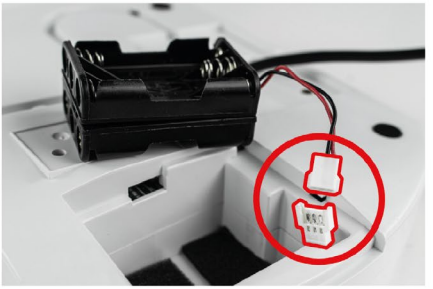
FUNCTION	DESCRIPTION	SETUP
A.OFF	Auto-off	OFF - 120 - 180 - 240 - 300 seconds
BUZZ	Acoustic signal	ON - OFF
BLUET	Bluetooth	ON - OFF
AUTO P	Print	ON - OFF
LANGU	Language	ITA - EN
END	Exit	

5.2 REPLACE ALKALINE BATTERIES WITH RECHARGEABLE BATTERY KIT (OPTIONAL)

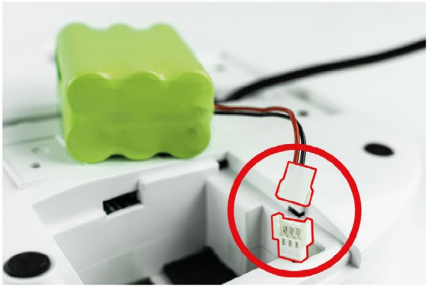


1. Open the battery compartment placed on the back side of the indicator

2. Remove the alkaline batteries container carefully



3. Disconnect the connector shown in the figure

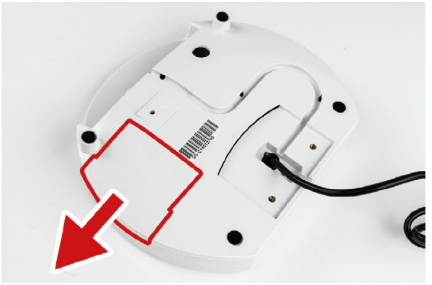


4. Connect the battery pack as shown in the figure

5. Insert the battery pack with the technical text facing upwards and the connector cable on the left. Insert the battery pack first and then gently place the cable in the bottom notch.

6. Close the battery compartment

5.3 ALKALINE BATTERIES REPLACEMENT



1. Open the battery compartment placed on the back side of the indicator

2. Remove the alkaline batteries container carefully

3. Remove the discharged batteries

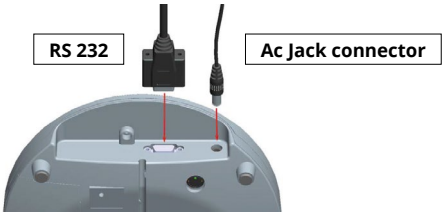
4. Insert the new alkaline batteries

5. Insert the batteries container first and then gently place the cable in the bottom notch.

6. Close the battery compartment

5.4 INSTRUCTION FOR CHARGING AND CONNECTING

If Lo prompt displays on the LCD, please charge the scale with the adaptor.
Plug the adapter on the rear side of indicator.
The battery should be recharged at least every 3 months regardless if it is used or not. After a long period in storage, e.g. over 3 months, the battery should run a full cycle (charge/discharge) to allow it to restore to full capacity.



Note: new batteries are supplied partially charged. They must be fully charged before use. In case of prolonged non-use, a complete discharge and recharge cycle should be carried out every 3 months.

ATTENTION!

FOR PROPER CHARGING OF THE BATTERY PACK,
CONNECT THE INSTRUMENT TO A POWER OUTLET FOR AT LEAST 8 HOURS

5.5 ONLY WEIGHT MODE:

This instrument can also be used as a normal scale.

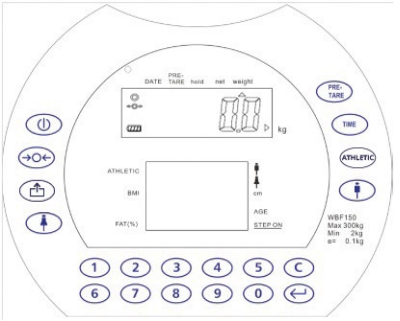
1. Press the power button
2. Place the patient and the first display will show the weight.

5.6 WEIGHT & BODY COMPOSITION MODE

ATTENTION!

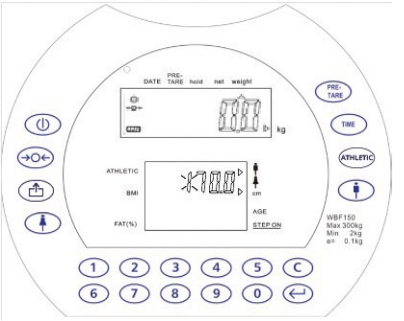
THE INFORMATION PROVIDED BY THE SCALE AND USED TO DETERMINE DIETS AND EXERCISE PROGRAMS, MUST BE READ AND CONSTRUED BY A QUALIFIED

1



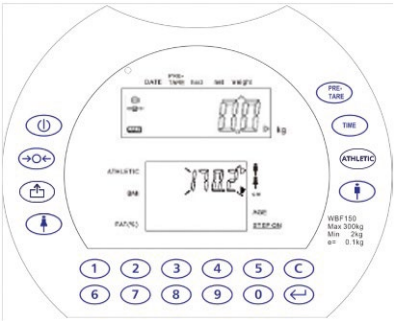
Press (⏻) key and the top display shows 0.0kg

2



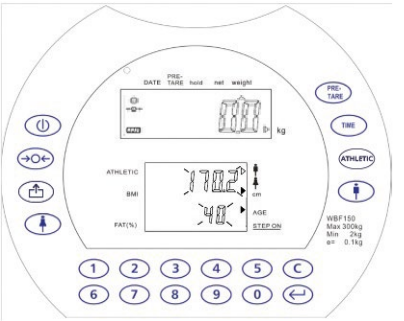
Select the body conformation with the keys (🚹), (🚺) or (ATHLETIC) and press (↵) to confirim.

3



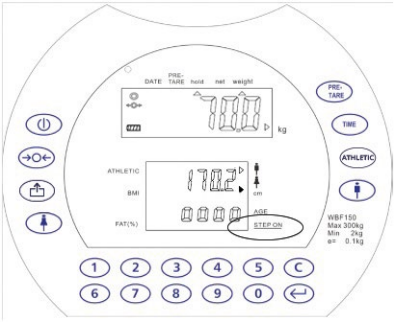
Insert height using the numeric keyboard and press (↵)

4



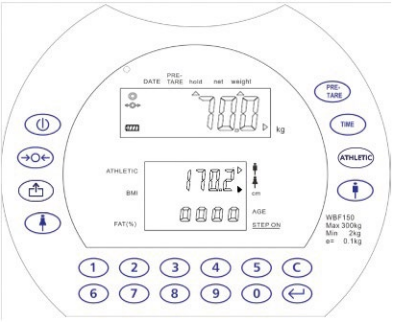
Insert age and eight using the numeric keyboard and press (↵)

5



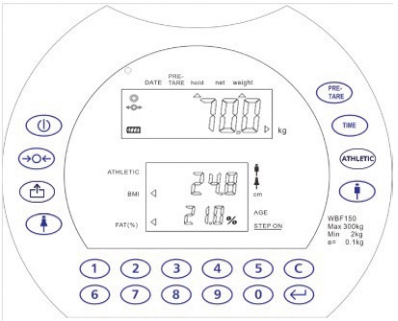
A flashing arrow appears on STEP ON.
Walk up barefoot on the 4-electrode of the platform and stand still. The upper display shows the weight detected (Figure 5).

6



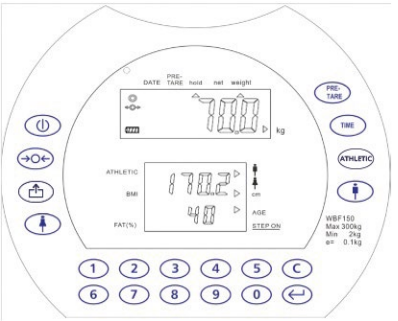
The lower display shows 'oooo' and begins the analysis of the body. When the symbols 'oooo' is moving, indicate the measurement body of the analysis and...

7



...the lower display shows BMI and %

8



Press ↵ to displays the age and height

To print the results, first check if the printer is powered on, than press the PRINTER key of the printer to print the results.
The measured data can be printed using thermal printer:
Info included: date, time and body type; Data measured: weight, BMI, Body Fat%, Fat Mass kg, kg lean body mass, body fluids, Basal Metabolism and impedance.

5.7 TARE (CLOTHES):

This feature allows you to remove the weight of the clothes from the measurement of the weight.

Turn the instrument on by pressing ⏻.
When the display shows “0,00” and you hear a beep, press PRE-TARE. The display shows 0000 flashing.

Select with the numeric keyboard the value of the clothes **es. 001,5 kg**. than press ↵.
The display will show the selected value in the negative. The value remains in memory until it is changed or deleted.
To delete the value PRE-TARE repeat the process by selecting the numeric keypad and pressing 0000 as PRETRAE

Value, then press ↵ to confirm.

6. PRINTER FUNCTIONS

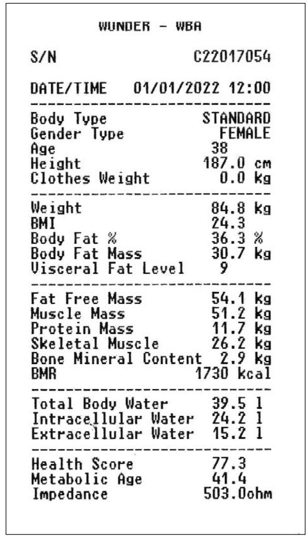
Weight can be printed for records using RS232 interface cable. After weighing simply press **[PRINT]** to print out the results.

The format presented below is the standard format of results print-out and cannot be changed.

More informations:
info@wunder.it or
service@wunder.it

WUNDER - WBA

S/N	C22017054
Data/Ora	01/01/2022 12:00
Struttura Fisica	STANDARD
Sesso	FEMMINA
Età	38
Altezza	187.1 cm
Peso Indumenti	0.0 kg
Peso	85.9 kg
IMC/BMI	24.5
Massa Grassa %	35.9 %
Massa Grassa	30.9 kg
Liv. Grasso Viscerale	10
Massa Magra	55.0 kg
Massa Muscolare	52.1 kg
Massa Proteica	11.9 kg
Muscolo Scheletrico	26.8 kg
Massa Ossea	2.9 kg
BMR	1758 kcal
Acqua Totale	40.2 l
Acqua Intracellulare	24.6 l
Acqua Extracellulare	15.6 l
Punteggio Fisico	77.4
Età Metabolica	41.3
Impedenza	488.7ohm

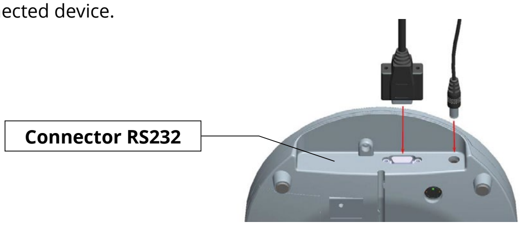


WUNDER - WBA

S/N	C22017054
DATE/TIME	01/01/2022 12:00
Body Type	STANDARD
Gender Type	FEMALE
Age	38
Height	187.0 cm
Clothes Weight	0.0 kg
Weight	84.8 kg
BMI	24.3
Body Fat %	36.3 %
Body Fat Mass	30.7 kg
Visceral Fat Level	9
Fat Free Mass	54.1 kg
Muscle Mass	51.2 kg
Protein Mass	11.7 kg
Skeletal Muscle	26.2 kg
Bone Mineral Content	2.9 kg
BMR	1730 kcal
Total Body Water	39.5 l
Intracellular Water	24.2 l
Extracellular Water	15.2 l
Health Score	77.3
Metabolic Age	41.4
Impedance	503.0ohm

Set parameters of the scale interface on the connected device.
It is not possible to change the scale parameters.

Baud rate: 9600 bps
Parity check: None
Data length: 8 bits
Stop bit: 1 bit
Handshake: RTS / CTS
Data code: ASCII



Serial RS232

Connecting with PC

Start Hyper Terminal

Start Hyper Terminal program from clicking
Start Menu → Programs → Accessories → Communication → Hyper Terminal.

PIN	SIGNAL
2	TX
3	RX
5	GND

New Connection Description

Give new connection a name then click OK.

Select Your COM Port

Click Connect to select your COM port. Usually there's only one option for select. Then click OK.

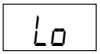
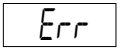
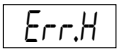
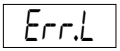
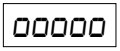
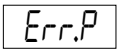
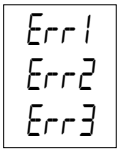
Port Settings

Click Bits per second to set up rate at 9600, Data bits at 8, Parity at None, Stop bits at 1 and Flow control at Hardware. Then click OK to complete your setting.

Output Data

When press the key to output data from scale to PC or an Optional Printer.

8. ERROR MESSAGES

ERRORS	DESCRIPTION	SOLUTION
	**Low battery:** The voltage of the battery is to low for operate	Please replace the battery with a new one or plug the adapter.
	**Overload:** The load exceeds the maximum capacity of the scale	Please reduce the load and try again.
	**Counting error (high):** The signal from the load cell/s is too high	Error normally caused by a serious fault of the scale (load cell or wiring). Please contact the local technical service.
	**Counting error (low):** The signal from the load cell/s is too low	Error normally caused by a serious fault of the scale (load cell or wiring). Please contact the local technical service.
	Power-on zero value too low or low	Recalibrate the scale Contact support
	Eprom error. Software error	Contact support
	Impedance transfer problem or connector connection problem	Contact support

9. MAINTENANCE AND ASSISTANCE

For better and longer duration of the product it should receive thorough general cleaning periodically.
The instrument must be cleaned with a soft cloth moistened with water or neutral detergent, without using solvents or abrasive substances. If the instrument remains idle for a long period, remove the batteries from the terminal. During shipping, make sure not to subject the instrument to blows or excessive mechanical stress.
In case of repairs or assistance, contact your dealer or an authorised service centre contacting service2@wunder.it or sales@wunder.it.

10. SCRAPPING AND WASTE DISPOSAL

If set aside for a long period, protect those parts which could be damaged due to dust build-up.

Scrapping: When you decide to no longer use this item, we recommend making it unusable. We also recommend making those parts which could be sources of danger harmless.

Waste disposal 2012/19/UE 

This product complies with the **Directive 2012/19/UE**. The symbol of the crossed-out waste bin on the appliance indicates that the product, needing to be treated separately from household waste, at the end of its useful life must be completed in a separate collection facility for electric and electronic appliances or returned to the dealer upon purchase of a new equivalent appliance. The user is responsible for bringing the appliance to an appropriate collection structure at the end of its life. Appropriate separate collection and sending the appliance for recycling, treatment and environmentally compatible waste disposal contributes to avoid possible negative effects on the environment and health and favours the recycling of the materials the product is made of.
For more detailed information regarding available collection systems, contact your local waste disposal service or the shop where the product was purchased.
As consumers, you are obliged by law to return used or dead batteries. You may deposit old batteries at public collection spots in your town or else with any battery dealer who has placed specific collectors for this purpose. Even when scrapping electric and electronic appliances, they must be removed and deposited in specific collectors.

NOTE: The following symbols indicate the presence of harmful substances.

Pb Pb = containing Lead	**Cd Cd =** containing Cadmium	**Hg Hg =** containing Mercury

ATTENTION!

Do not throw electric parts and used batteries away with household waste.
Dispose of the batteries by means of your closest collection centres.

11. WARRANTY

This certificate must be kept until the warranty has expired.
It must be presented together with the invoice, tax receipt or delivery note providing the name of the dealer and date of purchase whenever a technical intervention is required. Otherwise the user will lose any warranty rights.
The warranty takes effect from the date of purchase and is valid during the entire period foreseen by the current catalogue/pricelist.
By warranty we mean the replacement or repair free of charge of parts making up the appliance which, at the discretion of the manufacturer, are deemed faulty from the origin; Wunder therefore has the faculty of repairing or replacing the item.

The warranty does not cover:

- shipping faults, damage caused by falls, carelessness or tampering.
- damage caused by incapability of using the appliance and of its improper use.
- damage caused by an insufficient or inadequate electrical system or alterations resulting from environmental, climatic or other types of conditions.
- damage due to incorrect installation of the appliance and repairs carried out by unauthorised personnel.
- Interventions at home for convenience controls or presumed defects.
- Routine maintenance and that which can be considered normal wear from use.
- consumables such as: power supplies, batteries, keyboards, plates, wheels, heads, rolls, load cells faulty due to blows or overloads.

Service can also be refused when the appliance has been changed or transformed in any way.
In case of interventions at one's home, the customer must pay the fixed fee; if however the appliance is repaired at an authorised Wunder Service Centre, expenses and relative travel risk are borne by the user.
Wunder will not be held liable for damage of any nature caused directly or indirectly to persons, animals or objects resulting from failure to comply with all the instructions indicated in this manual or anyway resulting from improper use.
The Court of Bergamo has jurisdiction in case of any dispute.

12. TECHNICAL SPECIFICATION

Model	WBA 300	WBF300
Capacity	300kg	300kg
Division	100g	100g
Unit weight	kg	
Display	1" LCD weight 5 digits 20mm; 2° LCD BMI/ % Fat Mass	
Function Keys	ON-OFF, Zero, Tare, Printer; Body type; Sex, Time, Numerical keys 0~9; Reset key; Enter key	
Technology BIA	Bioelectrical Impedance Analysis 4 feet- electrode	
Impedance frequency	50kHz 500uA	
Impedance Range	200 ~ 1000Ω / 0.1Ω	
Age Range	10 ~ 80 years, increase of 1 year	
Height Range	60 ~ 210cm / 3ft ~ 7ft 11.0in	
Power	Rechargeable Batteries 7.2V 2000mA o batteries AA (1.5X6) 9V. Medical Adapter AC 12V 2A	
Platform dimension	340 (L) x 450 (P) x 80 (H) mm	
Temperature Use	5°C ~ 35°C - 30% / 80% UR	
Storage temperature	-20°C ~ 60°C - 0% / 90 % UR	
Output	RS232 9 pin female	
Optional (not included)	External thermal printer; Telescopic height meter	
Printer Data	Date	GG/MM/AAAA hh:mm Es: 01/01/2017 10:55
	Mode	Standard / Athletic
	Sex	Male / Female
	Age	10 ~ 80 years, increase of 1 year
	Height	60 ~ 210cm / 3ft ~ 7ft 11.0in
	Weight	0 ~ 300 kg
	BMI	Increase of 0.1
	BMR	Increase of 1 kcal
	Fat %	5 ~ 50% / increase of 0.1%
	Fat kg	Increase of 0.1 kg
	FFM	Increase of 0.1 kg
	Muscle Mass	Increase of 0.1 kg
	Protein Mass	Increase of 0.1 kg
	Skeletal Muscle	Increase of 0.1 kg
	Bone Mineral Content	Increase of 0.1 kg
	Intracellular Water	Increase of 0.1 l
	Extracellular Water	Increase of 0.1 l
	TBW	Increase of 0.1 l

13. INSTALLATION

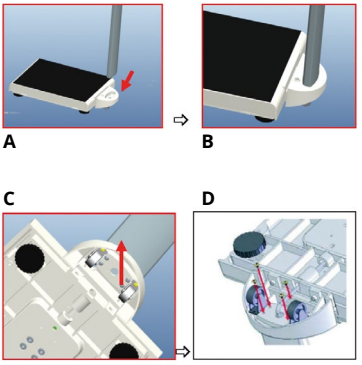
ATTENTION!

AFTER HAVING VERIFIED THE INTEGRITY OF THE EQUIPMENT AND OF ALL ITS COMPONENTS, CONNECT THE INSTRUMENT WITH THE SUPPLIED POWER SUPPLY TO CORRECTLY RECHARGE THE BATTERIES

Verification of equipment:
Model WBA 300 with printer 1. Base scale with support for column 2. Column and display 3. Thermal printer mounted on the column with a metal support with of the printer: already mounted on the column 4. External power supply for the scale 5. External power supply for the printer 6. User manual 7. Heght meter (optional not included)

Assembly

Assembly is easy: fix scale's column to the weighing platform (See Figure A)



- Overturn the weighing platform resting it onto a level surface.
- Remove the display connector from inside the column and connect it to the weighing platform connector, making it pass through the hole indicated by the red arrow (see Figure B).
- Fix the column to the weighing platform support using the 4 supplied screws.(see Figure C).
- Position the instrument on the floor and adjust the 5 feet to it.
- To use, connect the supplied external power supply to the current (see battery operation)

14. GENERAL CONDITIONS FOR CORRECT MEASUREMENT

⚠ **ATTENTION!**

Preventive steps to be carried out in advance of the test execution

1. To ensure accuracy, readings should be taken away from the meals. This is necessary since the mass of the food is measured together with the weight and it is susceptible to precise measurement.
1. **Prior to testing, if possible, you should urinate and defecate**
   Although not included in the elements that constitute the body mass, the volume of urine and excrement is included in the measurement.
2. **Did not run in conjunction with the following medical devices:**
   - Pacemakers and electro medical equipment like (Bypass).
   - Systems of artificial life, such as artificial hearts or lungs
   - Portable electrical devices, such as electro-cardiographs
3. Trying to be at rest before performing the test: strenuous exercise or sudden movements can cause temporary changes in body composition.
4. **Whenever possible, avoid performing the test after taking a shower or a sauna**
   The exudation causes temporary changes in body composition.
5. **Did not take the test during the menstrual cycle**
   Women experience an increase in water in the body during the menstrual cycle
6. **Perform the test at normal temperatures (20 °C - 25 °C)**
   While the human body is stable at normal temperatures, body composition is susceptible to extreme heat or cold.
7. **Always remember that more the body condition of the various measurements are similar and standards (eg wearing the same clothing, running the test before eating and do any type of exercise, etc...), plus the test results are reproducible and reliable.**

15. CONFORMITY

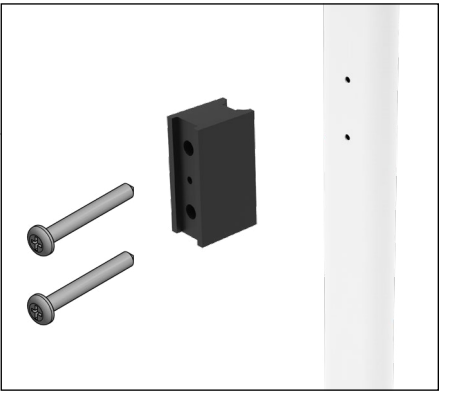
WUNDER MODEL WBA CABLE ELECTRONIC BODY FAT COMPOSITION SCALE SERIAL N°.....
We hereby certify that this instrument has been inspected and has successfully passed the functional test. It complies with the following standards and directives: **2014/31/UE - EN 45501**

16. ASSEMBLY-USE MECHANICAL TELESCOPIC HEIGHT ROD (OPTIONAL)

⚠ **ATTENTION!**
Only for column scale

16.1 FIXING MECHANICAL OR ELECTRONIC STATIMETER

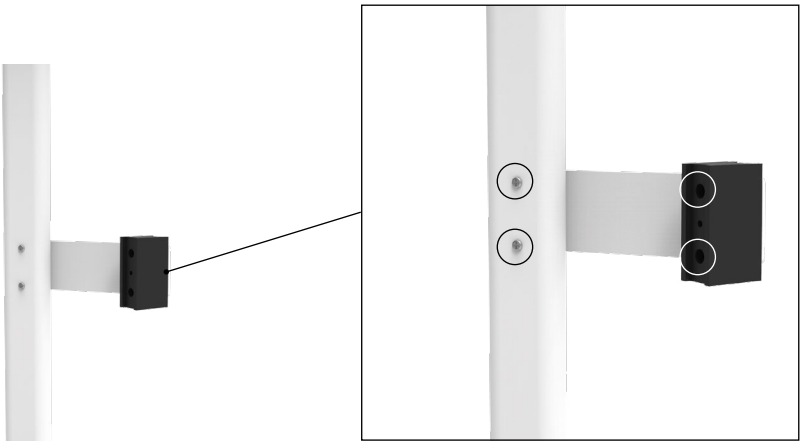
FRONTAL VERSION



Fix the black support of the statimeter to the column with the two screws provided as shown in the figure.

Screw in the statimeter with the supplied screw M6 countersunk

LATERAL VERSION

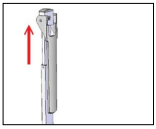
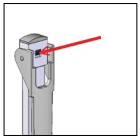
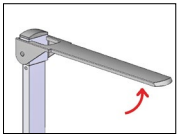
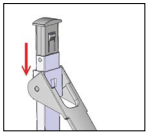
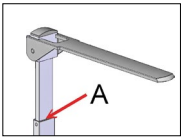
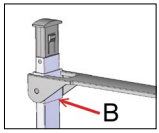


To fix the lateral rod, fix the bracket to the column where you prefer, right or left, and then fix the support of the rod.

16.2 USE OF MANUAL MECHANICAL STATIMETER

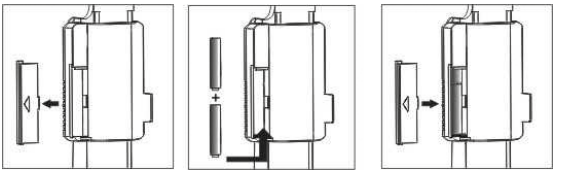
ATTENTION!

FOR THE MEASUREMENT OF HEIGHT THE PATIENT MUST BE ON THE SCALE PLATFORM

Measurements more than 130 cm		Measurements less than 130 cm	
1 	Pull up the height meter rod.	1 	Lower the headrest palette and press the black center stopper.
2 	Position it horizontally.	2 	Holding down the black stop, lower the headrest palette.
3 	Lower the rod up to the point where the lever rests head touches the patient's head. The height can be read at the point 'A'.	3 	Lower the cursor to the point where the blade touches the patient's head. The height can be read at point 'B'.

16.3 ASSEMBLE DIGITAL HEIGHT ROD (OPTIONAL)

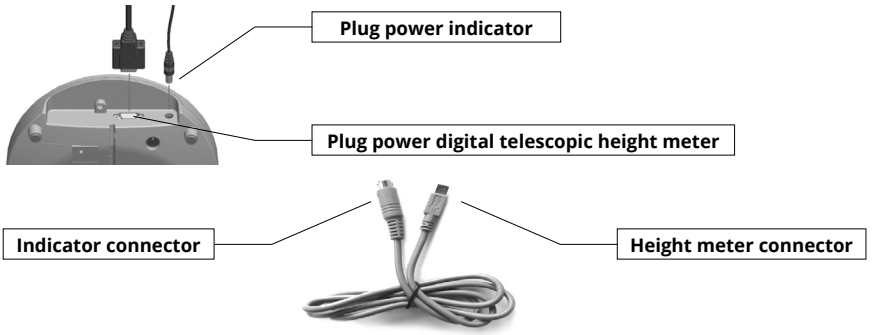
STEP 1: INSTALLATION ALKALINE BATTERY



a. Removing battery cover at the rear of indicator
b. Installing code AAA batteries * 2
c. Reinstalling the battery cover

STEP 2: CONNECTING CABLE DIGITAL TELESCOPIC HEIGHT METER

To use the digital height rod, a cable is provided to connect the height rod directly to the display and obtain the height measurement automatically.



The indicator connection is under indicator
The height meter connection is under indicator height meter

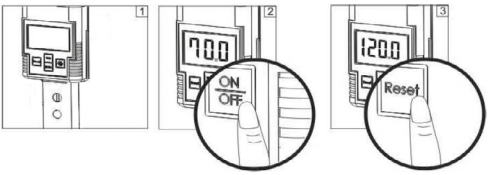
STEP 3: MEASURING HEIGHT

THE MEASUREMENT OF THE PATIENT MUST BE GETTING ON THE PLATFORM OF SCALE

16.4 USE DIGITAL TELESCOPIC HEIGHT ROD

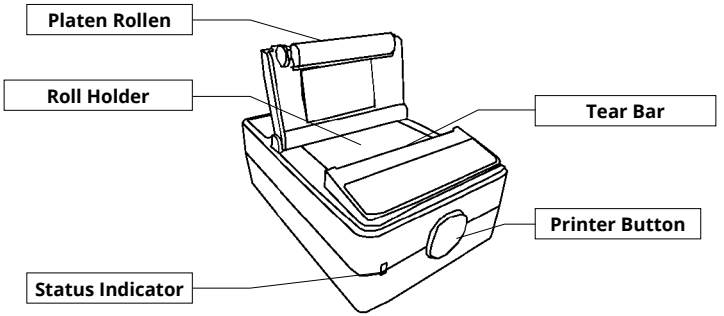
Steps to accurate measurement

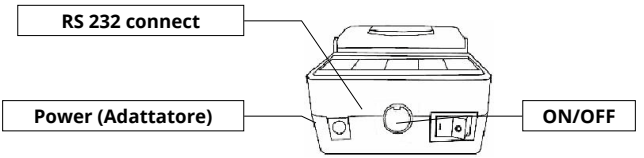
- Make indicator move to the end of measuring rod. Then switch ON and press reset key once to calibrate.
- Push the head stop far enough up the rod so that the person to be measured can stand underneath it comfortably.
- Ask the person to be measured to stand with his or her back to the rod.
- Sliding the head stop down until it touches the head.
- Read the height measured on the display unit.



17. THERMAL PRINTER (OPTIONAL)

⚠ **Read this manual carefully before using the instrument**





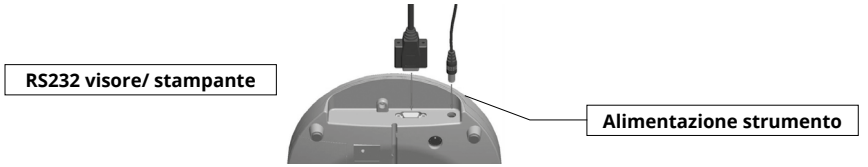
SHOCK HAZARD WARNING
The printer and power supply should never be operated in a location where either one can get wet. Personal injury could result.

MEDIA WARNING
Always use high quality approved paper print roll. The approved product can be ordered from your dealer.

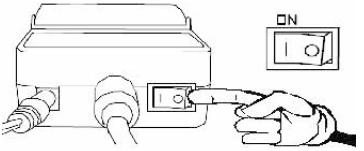
RELOADING HINT
If printer runs out of paper roll while printing, switch the power off and reload paper roll. Power on and print again.

17.1 HOW TO USE YOUR PRINTER

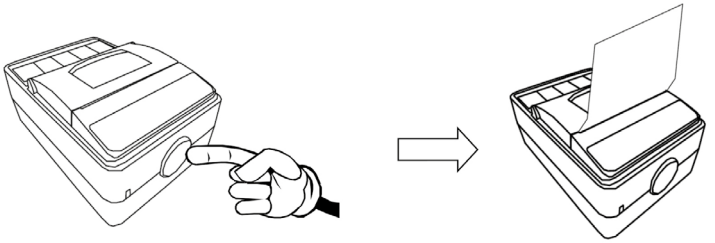
⚠ Connect the AC Adaptor and RS232 interface cable.
The PRINTER can be connected via the RS232 port and cable with the RB.



Press the **I/O** button to power on the printer.



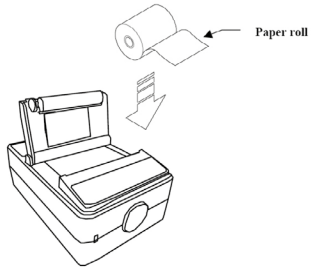
Press the **PRINT** key: Print double language



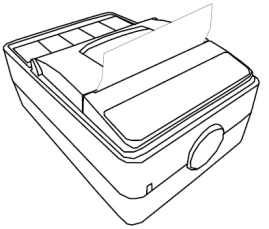
17.2 CHANGING THE PAPER ROLL

The paper print roll on a PRINTER XL printer is changed as follows:

1. Open the upper cover and position the paper roll so that it feeds in the right direction.



2. Feed the end of the paper roll through the printer cover and close the cover. The printer is ready to print.



17.3 PRINTER SPECIFICATION

ITEM	SPECIFICATION
Printing method	Thermal dot line printing
Resolution (dots/mm)	8 dot/mm
Printing width (mm)	48 mm
Max. paper thickness (µm)	80µm
Paper	57.5±0.5 mm (W) x ψ30mm max
Paper loading	Easy loading
Printing speed (mm/s)	75 mm/s
Dimensions (L x W x H)	120 x 80 x 50mm
Operating temperature (°C)	0°~ 50°C
Operating humidity (%)	20% to 85% (no condensation)
Interface	Conform to RS232
Voltage range (adaptor only)	12V 2A

17.4 ERROR MESSAGES

PROBLEM	SOLUTION OR REASON
Status Indicator does not light when power switch is turned to ON (I) position.	Check the power connections from AC outlet to the printer power supply.
Status indicator illuminated (green light), but the printer will not print.	Check interface cable connections from the scale to printer. Make sure the top cover is closed and locked.
Printer paper jammed.	Reset the paper roll. Please refer to “CHANGING THE PAPER ROLL”.
Status Indicator is flashing green.	Paper roll is out. Reload a new source of paper roll so the printer can continue printing. Please refer to “CHANGING THE PAPER ROLL”.

CE

Manufacturer's Declaration of Conformity

This product has been manufactured in accordance with the harmonized European standards, following the provisions of the below stated directives:

Electro Magnetic Compatibility Directive 2004/108/EC

Low Voltage Directive 2006/95/EC

FCC CLASS B Declaration of Conformity

This device complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules

18. WBA ADVICE

WBA300: CHECK IN ORDER TO PREVENT...

Today medical science states that excess body fat is the real enemy to health, as it is one of the major causes of cardiovascular diseases, hypertension, arthropathy, diabetes, various forms of cancer and the cause of some diseases typical of old age. However, we must never forget that body fat is essential for daily physical functions: it protects the joints and organs, helps regulate body temperature and stores vitamins. Therefore one must remember that the lack of fatty mass causes nervous disorders such as anorexia and bulimia. In response to this need, the new nutritional and dietary guidelines prescribe dietary behaviours and specific diets combined with balanced physical activity, aimed at improving the physical condition, improving muscle tone and decreasing the excess body fat percentage.
In summary, the control of body fatty mass is therefore a fundamental parameter for your health.

WBA300: WHAT IS IT?

It is a professional scale with a bio-impedance meter that uses bioelectrical impedance analysis technology to measure the body composition of our weight. This scientifically recognised technology is based on passing a light current (non-invasive) which, depending on the varying amount of water in the various parts of the body, creates a resistance that is analysed and translated into various useful parameters, quantity of body fluids, of fatty mass and lean mass, translated into kilograms and percentage.

WBA300 WHY?

BIA scientifically recognised technology
Non-invasive measurement method, in constant conditions of the measured patient, the results are reliable and reproducible over time.

Upright position, speed and practicality of the measurement
To perform a check-up, simply stand on it barefoot and with a single weight reading, obtain a complete analysis of the body mass, without the application of annoying electrodes, as necessary with traditional systems.

Easy data interpretation
The results provided are easy to understand: this allows you to identify a complete picture to share with the patient, helping them understand their situation and the importance of this screening.

User-Friendly
A device consisting of two integrated instruments: a professional scale associated with a bipolar bio-impedance meter which analyses the total body mass.

Tactile electrodes: no disposable material is used
WBA300 does not require additional costs: unlike conventional systems, disposable electrode supplies are not required, thereby reducing costs.

THESE TABLES CONTAIN PURELY INDICATIVE DATA.

WEIGHT:

Not all bioelectrical impedance analysis devices measure weight.
WBA300 combines 2 technologies because today weight and body composition are closely related.

BMI (BODY MASS INDEX):

The Body Mass Index (BMI, kg/m2), or Quetelet index, calculated by dividing the weight in kg by the square of the height in meters, is the most used weight index in adults (World Health Organization, 1995; World Health Organization, 1998) as an expression of the "correct" weight for your height,

Calculated as: WEIGHT (kg)/HEIGHT (m)2

BMI REFERENCE VALUES	**Clinical condition**	
< 16	Serious malnutrition	Malnutrition (underweight)
16 - 16.9	Moderate malnutrition	
17 - 18.4	Mild malnutrition	
18.5 - 24.9	Normal	Normal weight
25 - 29.9	Overweight	Overweight
30 - 34.9	Class 1 obesity (mild)	Obesity
35 - 39.9	Class 2 obesity (moderate)	
≥ 40	Class 3 obesity (serious or morbid)	

Bibliography

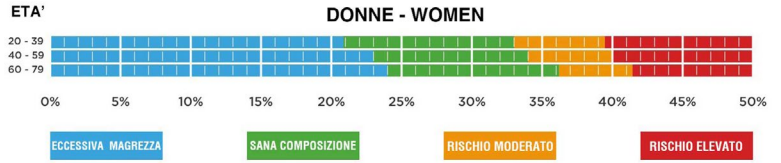
1. Jensen MD, Ryan DH, Apovian CM, Ard JD, Comuzzie AG, Donato KA et al. 2013 AHA/ACC/TOS Guideline for the Management of Overweight and Obesity in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and The Obesity Society. Circulation 2014; IN PRESS.
2. Expert Panel on the Identification, Evaluation, and Treatment of Overweight in Adults. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults: executive summary. Am J Clin Nutr 1998;68:899-917.
3. World Health Organization. Physical status: the use and interpretation of anthropometry. Report of a WHO Expert Committee. World Health Organ Tech Rep Ser 1995;854:1–452.

FAT MASS

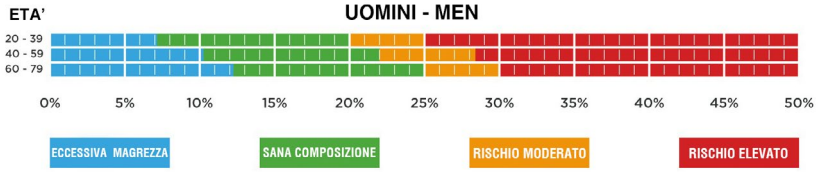
It has been shown that reducing excess fatty mass reduces the risk of cardiovascular diseases, hypertension, arthropathy, diabetes, various forms of cancer and the cause of some diseases typical of old age. It should also be remembered that the lack of fatty mass causes nervous disorders such as anorexia and bulimia. Therefore, excessively high or low values must be monitored according to the reference values. Following are the tables with the reference values of the body fat percentage.

Reference values

Women			
Clinical condition	**Reference body fat percentage values for women**		
Age	**19 - 39 years**	**40 - 59 years**	**60 - 79 years**
Very lean	< 21	< 23	< 24
Healthy composition	21 - 32.9	23 - 33.9	24 - 35.9
Moderate CV risk	33 - 38.9	34 - 39.9	36 - 41.9
High CV risk	≥ 39	≥ 40	≥ 42



Men			
Clinical condition	**Reference body fat percentage values for men**		
Age	**19 - 39 years**	**40 - 59 years**	**60 - 79 years**
Very lean	< 8	< 11	< 13
Healthy composition	8 - 19.9	11 - 21.9	13 - 24.9
Moderate CV risk	20 - 24.9	22 - 27.9	25 - 29.9
High CV risk	≥ 25	≥ 28	≥ 30
High CV risk	≥ 39	≥ 40	≥ 42



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LEAN BODY MASS

Lean body mass includes skeletal muscles, smooth muscles, such as cardiac and digestive muscles, and the water contained in these muscles. Muscles act as a motor in energy consumption.
As muscle tone increases, the rate at which energy is consumed (calories) increases which accelerates the basal metabolic rate (BMR). This helps to reduce excess body fat levels and to lose weight in a healthy and balanced way. Increasing your muscle mass could also increase your total body weight.
This is why it is important to monitor weight and body composition.

WAIST CIRCUMFERENCE REFERENCE VALUES

WOMEN	
Waist circumference	**Clinical condition**
80 - 88 cm	Moderate cardiovascular risk
> 88 cm	High cardiovascular risk
MEN	
Waist circumference	**Clinical condition**
94 - 102 cm	Moderate cardiovascular risk
> 102 cm	High cardiovascular risk

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Alberti KG, Zimmet P, Shaw J; IDF Epidemiology Task Force Consensus Group. The metabolic syndrome--a new worldwide definition. Lancet 2005;366:1059-1062.
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WAIST-HIPS REFERENCE VALUES

WOMEN	
Waist-hips ratio	**Clinical condition**
0.80 - 0.85	Moderate cardiovascular risk
≥ 0.86	High cardiovascular risk
MEN	
Waist-hips ratio	**Clinical condition**
0.90 - 0.99	Moderate cardiovascular risk
≥ 1.00	High cardiovascular risk

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Wajchenberg BL. Subcutaneous and visceral adipose tissue: their relation to the metabolic syndrome. Endocr Rev 2000;21:697-738.

WAIST-TO-HEIGHT RATIO REFERENCE VALUES

WOMEN	
Waist-to-height ratio	**Clinical condition**
≥ 0.54	Increased cardiovascular risk
MEN	
Waist-to-height ratio	**Clinical condition**
≥ 0.56	Increased cardiovascular risk

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