

Standard Analytical Balance



Operating Manual

written for
WBA - 220

witeg Labortechnik GmbH

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1 General

Thank you for purchasing our **WBA Standard Analytical Balance**. You did a good choice buying a **Wisd** product.

Before use, please read this manual and use it properly.

To cover the user's health and avoid the product's destruction you have to follow the safety instructions of the second chapter.

Please keep this operating manual in a save place for future reference and hand it out if you consign the device to a third person.

Witeg reserves to modify the capsule or make amendments for the improvement of quality and efficiency without prior notice.

2 Safety Instructions

2.1 Description of symbols

**WARNING**

Information for avoiding injuries or fatal accidents.

**ATTENTION**

Safety instruction to avoid a damage of the product.

**ATTENTION**

Information about technical parameters.

**Environment**

Information about the operating environment.

**WARNING of explosions**

Safety instruction to avoid explosions.

2.2 Instructions

For a safety and faultless using of the device it is indispensable that you read the following instructions purposely and follow them by the use.



- Connect the device only to the suitable power supply. Please have a look to the identification plate.
- Use the device only in electric circuits with ground fault circuit interrupter.
- Check the power supply cord before you stick it into the electrical outlet.

- Do not use power bars to extend the power supply cord.
- Only use extension cables with sufficient cable cross section.
- Do not touch the device with wet hands during the usage because this might cause an electrical shock.
- If unexpected sound, smell or smog is generated by the device, pull out the main plug and contact the manufacturer or your supplier immediately.
- Disconnect the power supply plug before cleaning or maintenance.
- If you use radiation or contaminated samples the responsibility is only up to you.



- It is important that the device stands up on a horizontal, stabile and firm subsurface to avoid vibrations.
- Make sure that the device cannot slip away.
- To avoid heat congestion or fires make sure that there is enough space for air circulations.
- Avoid direct solar radiation.
- Do not use the device near highly combustible materials.
- Do not set the device outdoors.
- It is superiorly to set the device in a good illuminated place to avoid accidents engendered by handling errors.
- To set the device in wet or dusty places could cause overheating, short circuits or fires.



- Do not use this device in area with potentially explosive atmosphere.



- Reparations and amendments should only made by **witeg** authorized people.
Contraventions exclude the warranty.



- Use this device only if you read the whole safety instructions.
- This device should only use by persons who are familiarized with safety instructions made for laboratories.
- Pay attention that no liquid reaches the controller or inward of the capsule.
- You have to keep the device clean if you want to get a longer life of it.
- Wear corresponding protective work clothing during the usage.
- Pull out the power cable if you didn't want to use the device for a longer time.

2.3 Product introduction

This product provides high accuracy and convenience as an electronic balance for laboratory analysis.

Because it is quickly and accurately measured and it is equipped with various measuring






functions, the width of purpose of use is wide.

This product was developed and manufactured by considering the convenience and safety for use, and there are the following features:



1. Because LCD screen with clear and wide Back-light feature is built-in, it is easy to check the current status of this product.
2. Because it is made of solid aluminum, it is lightweight and has excellent durability.
3. This product is equipped with a variety of weight unit modes, so it can support the wide using area.
4. Because a glass box is mounted, the weighing platform is protected from the flow of air and the dust.
5. The Stainless Steel Pan can be installed or removed, so it is easy to keep cleanliness.
6. Because the top and both sides of Weighing Chamber can be opened and closed, it is very convenient to measure the mass while manipulating a sample.
7. Because the anti-shock function of four steps is mounted, this product is safely protected.
8. RS232 communication cable for data output and USB cable are supported, so it is supported so that user is convenient to store data. (Selectable Option).
9. 20 units of measurement in this product are supported, so users can widely use it.
10. Because the program that can measure the coefficient is supported, users can widely use it.
11. Because this product is equipped with the leveling screws, user can directly adjust the horizontality of the product at the installation position.
12. The input of this product is convenient by applying the simple icon that gives a priority to user convenience.

3 Accessoires

3.1 Standard scope of delivery

Component Photo	Component Name	No. of Configuration
	WBA Standard Analytical Balance	1 unit
	Calibration Weight	1ea
	Weighing Plate	1ea
	AC Power Supply	1ea
	Operating manual	1ea

3.2 Optional accessories

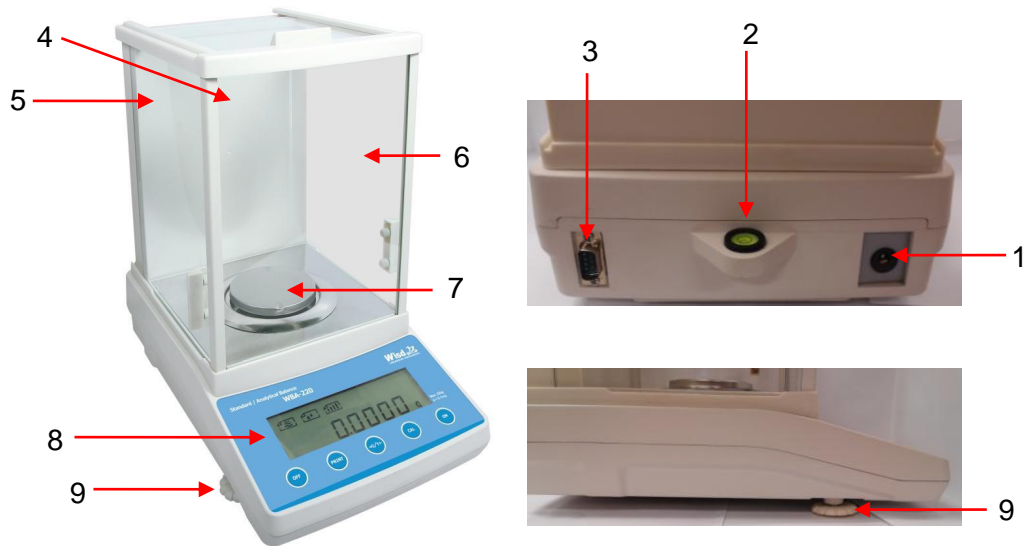
Image	Ordering Number	Information
	DH.WBA0083	Thermal Printer, Paper Roll, "WBA-083", Included Cable module, 1XPaper Roll
	DH.WBA0084	Thermal Paper Package, 5X Paper Roll, for "WBA-083"
	DH.WBA0770	Thermal Printer, Label Paper Roll, "WBA-770", Included Cable Module, 1XLabel Paper Roll
	DH.WBA0771	Thermal Label Paper Package, 5XLabel Paper Roll, for "WBA-770"

4 Positioning the device and commissioning

1. Please do not lay the product on the floor or subject it to shock. It can cause damage inside the product.
2. Please install the product in a hard, flat, and stable place.
3. Please do not install the product in a place where it is exposed to direct sunlight, or in the dangerous places.
4. To minimize the risk of short circuits, do not install the product (in the) places where it will be subjected to the inflow of moisture or organic solvents on the regulator part or inside of the body.
5. Please, do not put the scale in the place where there is severe moisture for a long time. If you put a cold scale in the warm environment, moisture can be condensed on the surface of the balance. In this case, the balance should be used after adapting in the room temperature.
6. This product was manufactured for normal operation at a rated voltage, so please check the voltage status before installing the product.
7. When installing and using the product, please certainly use the power cord provided with the products.
8. After installing the balance in the appropriate place, the water drop of the level located in the center of the back side sets to come in the center by turning the horizontal regulating screw on the bottom of the scale, and then uses it.
9. If you wish to use the weighing plate, please use the disposable paper (parchment paper) or the plastic plate of the light material commercially sold for an experiment. If the capacity of the weighing plate is large, it is impossible to use the appropriate capacity of the balance.
10. You must be careful so that the equipment is not exposed to high humidity for long term. The accumulation of high humidity is able to be generated when cold equipment was suddenly exposed in the warm environment can be not determined. In this case, the equipment is disconnected the power at room temperature and it should be adapted more than 2 hours.

5 Product description

5.1 General survey



NO	Na	Description
①	Power connections	Connection piece of Power cord
②	Bubble Level	Check the equilibrium
③	RS232 connection	Port for connection with print by cable
④	Upper glass Door.	Upper glass Door/Protection against wind
⑤	Left glass Door	Left glass Door/Protection against wind
⑥	Right glass Door	Right glass Door/Protection against wind
⑦	Weighing Plate	For sample measurement.
⑧	Controller	Set and Check operation
⑨	Adjuster for equilibrium	Adjust Equilibrium

5.2 Controller



Name	Description
OFF	Turn off
PRINT	Press to manually print or to send a communication. Press to move the parameters.
→O/T←	Press to initialize the weight of a container. Press to return the previous menu without saving. Press to exit from the weighting function.
CAL	Press when you want to adjust the weight. Press to select the value of the variable.
ON	Turn on

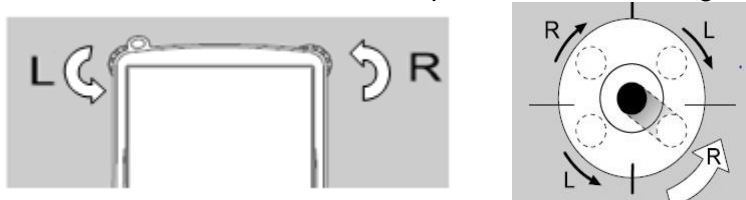
6 Product Usage

6.1 Display



Icon	Name and Description	Icon	Name and Description
g	Gram		Sensitivity measurement signal(Low)
pcs	Count		Sensitivity measurement signal(Normal)
ÖZ	Ounce		Sensitivity measurement signal(High)
ct	Carat		Continuous Printing
188°C	Temperature		Print during 2 min.
88:88T	Set Time and Heating Time		Print during 1 min.
	Extent of reaction rate		Print during 30 sec.

- For accurate results, the stabilization time of about 30 minutes before the operation of the product should be given.
- This product should be adjusted so that the water drop of the level comes in the center by adjusting the horizontal regulating screws that play a role of two brackets on the bottom of its rear panel as shown in Figure.







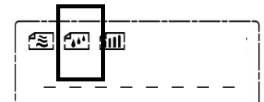


- The water drop located in the center means the equilibrium condition. Please check this condition before use.

6.2 Function Setting

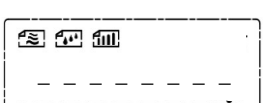
6.2.1 Sensitivity Setting

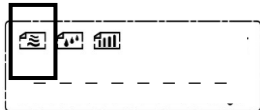
Sets up the degree of the sensitivity responding for the external input stimuli as the numerical value.

Step	Key (or instruction)	Display
1. Connecting the power cord, LCD Display is turned on, and pressing "ON" button, the power is turn on.	ON	
2. If the screen of Display is stabilized, press and hold the "ON" button for 3 seconds. "SEt-A" is appeared on the Display, and enters into the sensitivity setting mode.	ON	SEt-A
3. Pressing "PRINT" button, ASd-0 appears, and ASd-0, ASd-1, ASd-2, and ASd-3 are repeatedly switched.	PRINT	ASd-0  ASd-1  ASd-2  ASd-3 
4. ASd-0-----Best Sensitivity ASd-1-----High Sensitivity ASd-2-----General Sensitivity ASd-3-----Low Sensitivity	PRINT	ASd-3 
5. Pressing →0/T← at the desired degree of sensitivity, the setting values are saved, and the Display returns to the initial screen.	→0/T←	

6.2.2 Reaction Rate Setting


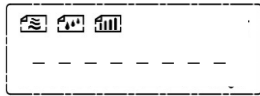
Set up the reaction rate of the sample.

Step	Key (or instruction)	Display
1. Connecting the power cord, LCD Display is turned on, and pressing "ON" button, the power is turn on.	ON	

Step	Key (or instruction)	Display
2. If the screen of Display is stabilized, presses and holds "ON" button for 3 seconds, and check that "SEt-A" appears on the Display, and then press the "ON" button. "SEt-1" appears on the Display, and enters into the reaction rate setting mode.	ON X 2	SEt-1
3. Pressing "PRINT" button, Int-0 appears, and Int-0, Int-1, Int-2, and Int-3 are repeatedly switched by "PRINT" button.	PRINT	Int-0 Int-1 Int-2 Int-3
4. Int-0-----Best Speed Int-1-----High Speed Int-2-----Normal Speed Int-3-----Low Speed	PRINT	Int-3
5. Pressing →0/T← at the desired Reaction Rate, the setting values are saved, and the Display returns to the initial screen.	→0/T←	

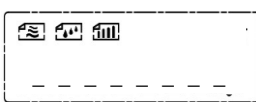






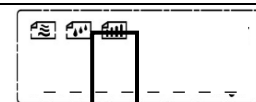
6.2.3 Metering Unit Setting

Change by selecting the weighing unit.

Step	Key (or instruction)	Display
1. Connecting the power cord, LCD Display is turned on, and pressing "ON" button, the power is turn on.	ON	
2. If the screen of Display is stabilized, press and hold "ON" button for 3 seconds, and press twice "ON" button again after checking that "SEt-A" appears on the Display. "SEt-U" appears on the Display, and enters into the Unit setting mode.	ON X 3	SEt-U
3. Pressing "PRINT" button, Unt-1 appears, and Unt-1, Unt-2, and Unt-3 are repeatedly switched by "PRINT" button.	PRINT	Unt-1 Unt-2 Unt-3
4. Unt-1----- g (gram) Unt-2-----ct (ounce) Unt-3-----oz (carat)	PRINT	Unt-3 Oz
5. Pressing →0/T← at the desired Unit, the setting values are saved, and the Display returns to the initial screen.	→0/T←	

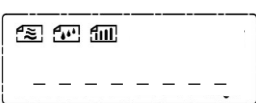
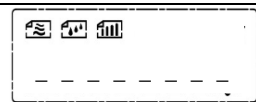
6.2.4 Printer Setting

Set up the output function of the printer.

Step	Key (or instruction)	Display
1. Connecting the power cord, LCD Display is turned on, and pressing "ON" button, the power is turn on.	ON	
2. If the screen of Display is stabilized, press and hold "ON" button for 3 seconds, and press three times "ON" button again after checking that "SEt-A" appears on the Display. "SEt-P" appears on the Display, and enters into the Printer setting mode.	ON X 4	SEt-P
3. Pressing "PRINT" button, Prt-0 appears, and Prt-0, Prt-1, Prt-2, Prt-3, and Prt-4 are repeatedly switched by the "PRINT" button.	PRINT	Prt-0  Prt-1  Prt-2  Prt-3  Prt-4 
4. Prt-0----Button once output Prt-1----30 seconds output Prt-2----1 minute output Prt-3----2 minutes output Prt-4----Continuous output	PRINT	Prt-4 
5. Pressing →0/T← at the desired Printer Setting Mode, the setting values are saved, and the Display returns to the initial screen.	→0/T←	

6.2.5 Counting Function Setting


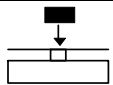
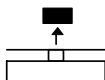
Determine the quantity of parts with the same mass by measuring the weight of the part.

Step	Key (or instruction)	Display
1. Connecting the power cord, LCD Display is turned on, and pressing "ON" button, the power is turn on.	ON	
2. If the screen of Display is stabilized, press and hold "ON" button for 3 seconds, and press four times "ON" button again after checking that "SEt-A" appears on the Display. "SEt-0" appears on the Display, and enters into the r Counting Function Setting mode.	ON X 5	SEt-0
3. Pressing "PRINT" button, COU-00 appears, and COU-00, COU-10, COU-25, and COU-50 are repeatedly switched by "PRINT" button.	PRINT	COU-00 COU-10 COU-25 COU-50
4. COU-00---- Normal Measurement Mode (Counting Function Inactive) COU-10----10 quantities measurement COU-25----25 quantities measurement COU-50----50 quantities measurement	PRINT	COU-10
5. Pressing the →0/T← in the desired Quantity Mode, the setting values are saved, and the Display returns to the initial screen.	→0/T←	

6.3 Calibration and Weighing

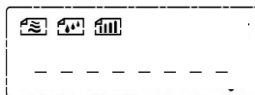
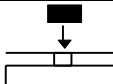
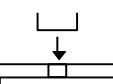
6.3.1 Calibration and Adjustment

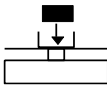
- The calibration is randomly conducted by the user after that the user checks the actual weight and the measurements by using the Sample with the specified value. The error of the measurements during using can be minimized by minimizing the difference value at an acceptable level.
- Conduct the calibration after checking whether the scale accurately maintains the horizontal condition or not, by using the Calibration Weight among the components of the product before the regular operating of the scale.

Step	Key (or instruction)	Display
1. Connecting the power cord, LCD Display is turned on, and pressing "ON" button, the power is turn on.	ON	
2. If the screen of Display is stabilized, press "CAL" button. "CAL-200" appears on the Display, and the value that wants to calibrate is blinked.	CAL	CAL-200
3. Put the Calibration Weight of the components of the product on the balance.		200.000g
4. The balance automatically progresses the calibration to the actual value measured on it.	-	-----
5. After the calibration is completed, the measured value is displayed. If putting down the balance weight from the balance, the calibration is completed.		2000.000g

6.3.2 Measurements function of Basic weight.

Proceed in order in this description when basically measuring the weigh.

Step	Key (or instruction)	Display
1. Connecting the power cord, LCD Display is turned on, and pressing "ON" button, the power is turn on.	ON	
2. Place the sample to be measure the weight on the weighing pan. (in this Example : 100g)		100.000g
3. User can check whether both the weight of a weight and the result measurement value of the Display are the same or not.		100.000g
4. Press the →0/T← button, and initialize the previous weight.	→0/T←	-----
5. When put a container on the balance and want to measure the weight of a Sample, except for the weight of the container, first, put the container on the balance and adjust "0" point by pressing the →0/T← button.	 →0/T←	-----

6. After checking "0" point, put the sample to be measured on the weighing pan. (in this Example : 100g)		100.000g
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7 Maintenance and cleaning

- Please read the whole safety instructions before you start to maintain or clean the device.
- Pull the power plug out of the electrical outlet.
- Only use care cleaning agents and soft cleaning rags.
- Organic lotions, strong chemicals and rough cleaning rags can damage the device.
- If you not want to use the device for a long time, pull of the power plug and keep it dry in the package.
- The samples of large particle and powders are carefully brushed away or removed by a small vacuum cleaner. In this case, the power of the product must be turned off.
- Do not use water, Benzene, Thinner or any alcohol for cleaning the product. It may cause discoloration, damage, an electric shock or fire.
- Only use original spare parts.

8 Troubleshooting Guide

Situation	Confirmations and Solutions
The display does not appear	<ul style="list-style-type: none"> ✓ Check the supplied voltage is present. ✓ Check the power connection and the power cord for proper connection and integrity. ✓ Make sure that the power of the balance is off.
The measured value is still vary	<ul style="list-style-type: none"> ✓ Make sure that there is no movement of wind and air. ✓ Check the vibration of the installation table or floor. ✓ Make sure that foreign material is stained on the weighing pan. ✓ Check the peripherals for whether it is the problem due to electromagnetic field / electrostatic or not.
The measured value is not correct	<ul style="list-style-type: none"> ✓ Make sure that it is set to the zero(0) point. ✓ Make sure that the calibration values are correct.
If any other error is occurred, turn the power of the product off and then turn it on again.	

If other problems arise, or one of the above not solves problems, please contact your official agent or the manufacturer.

Reparations and amendments should only made by [witeg](#) authorized people. Contraventions exclude the warranty.

9 Technical data

Specification / Model	WBA-220
Weighing Range	0,1 mg ~ 220 g
Weighing Plate	Ø 80 mm
Read-Out [d]	0,1 mg
Reproducibility	0,1 mg
Linearity	0,1 mg
Permissible Temperature	5,0 ~ 35°C
Weight Mode	g / ct
Counting Mode	Available Counting & Weighing Mode
Calibration	External Calibration, Included 200 g Calibration Weight
Display	Digital LCD with Back - Light Function
Dimension (wxdxh) & Net Weight	190 x 240 x 265 mm / 6,3 kg
Power supply	DC 9 V, with AC 220V Adapter, 60Hz

10 Certificate

Certificate

for



The quality and all features were checked by the manufacturer before the shipment.

We grant from date of purchase

two years guaranty.

This certificate excludes damages by natural disasters or incorrect usages by the costumer.

Please look on your account and complete following table:

Article	Standard Analytical Balance
Typ	
Serialno.	
Date	

witeg Labortechnik GmbH

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