Standard Analytical Balance

Operating Manual

written for
WBA -320/ -620/ -3200/ -6200

witeg Labortechnik GmbH

Contents

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 the current date and time can be set up, it is convenient to record.
5. Because a glass box is mounted, the weighing platform is protected from the flow of air and the dust.(WBA-320/-620 Model)
6. The Stainless Steel Pan can be installed or removed, so it is easy to keep cleanliness.
7. 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. (WBA-320/-620 Model)
8. Because the anti-shock function of four steps is mounted, this product is safely protected.
9. 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)
10. Because the wide square pan for the measurement of various samples is mounted, it is convenient to use. (WBA-3200/-6200 Model)
11. Because a weights box is mounted, it is easy to keep the weights.(WBA-620 Model)
12. 20 units of measurement in this product are supported, so users can widely use it.
13. Because the software for density measurement is built-in, the density of samples can be quickly and conveniently measured.
14. The automatic calibration by a weight built-in type model, and the selection of calibration using external weights are possible.
15. Because the program that can measure the coefficient is supported, users can widely use it.
16. Because this product can measure the dynamic weight, if the weighing of the important animal is required, it can be easily implemented.
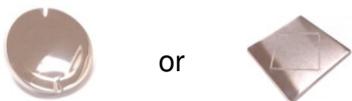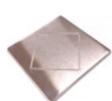
3 Positioning the device and commissioning

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.

4 Accessoires

4.1 Standard scope of delivery

Component Photo	Component Name	No. of Configuration
	WBA Standard Analytical Balance	1 unit
	Calibration Weight **(WBA-6200 - none)**	1ea
or	Weighing Plate	1ea
	AC Power Supply	1ea
	Operating manual	1ea

4.2 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"
	DH.WBA0003	Glass Draft Shield, 3 Slide Doors (Left, Right, Top), 175 X 195 X h230 mm

.

5 Product description

5.1 General survey

WBA-320/ -3200/ -6200

WBA-620

NO	Name	Description
①	Power connections	Connection piece of Power cord
②	RS232 connection	Port for connection with print by cable
③	USB 2.0 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	Bubble Level	Check the Equilibrium
⑩	Adjuster for equilibrium	Adjust equilibrium

5.2 Controller

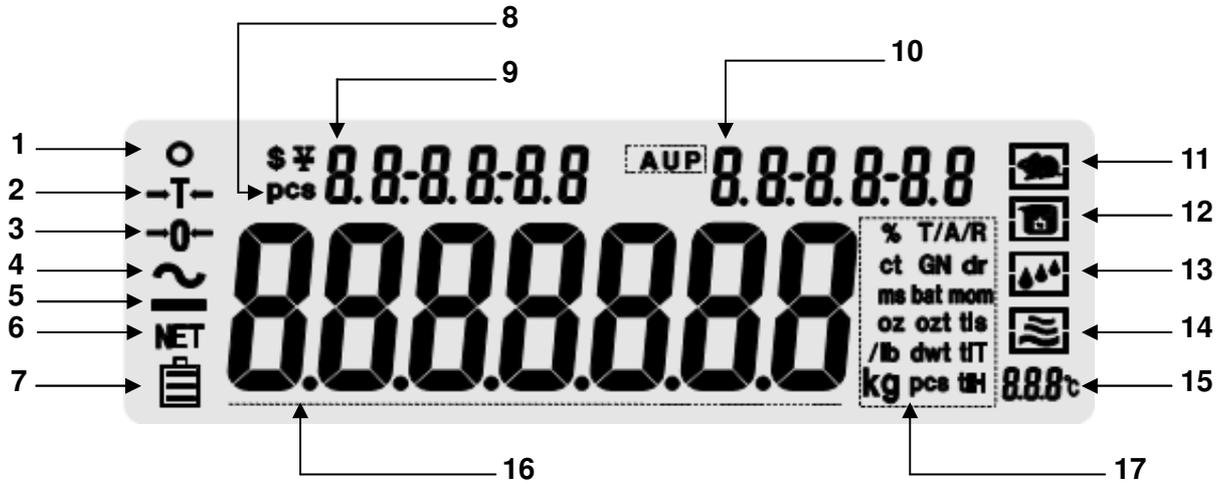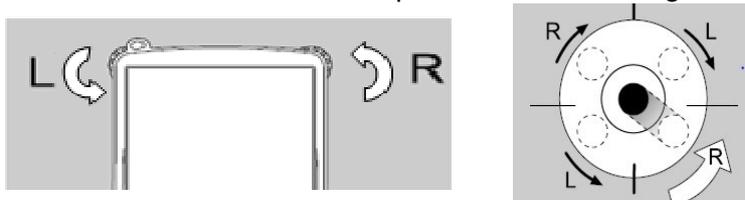| Name	Description
TARE	Press to initialize the weight of a container. Press to return the previous menu without saving. Press to exit from the weighting function.
UNIT	Press when you want to change the unit. Press to move the left. Press to select all of the digits. Press to set the parameters.
MENU	Press when you want to change the system menu. Press to exit the System Settings menu. Press this button to return to the previous menu. (WBA-620 Model is the MAIN Button.)
PRINT	Press to manually print or to send a communication. Press to move the parameters.
CAL	Press when you want to adjust the weight. Press to select the value of the variable.
POWER	Power On/Off

6 Product Usage

6.1 Display

NO	Name and Description	NO	Name and Description
1	Stable status display	10	Omnipresent time display
2	Tare signal	11	Dynamic measurement signal
3	"0"point value display	12	Density measurement signal
4	Back up signal	13	Sensitivity measurement signal
5	Weight indication signal	14	Protection against Dust measurement signal
6	Total hops signal	15	Current temperature display
7	Battery status	16	Showing Menu items and Weight results
8	Quantity display	17	Unit display
9	Menu level, and Current date		

6.2 Preparation stage

- 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.
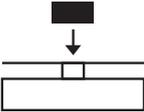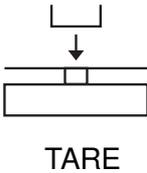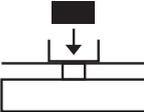

- The water drop located in the center means the equilibrium condition. Please check this condition before use.
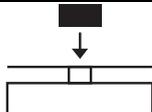
6.3 Basic Functions
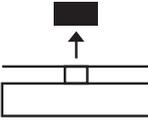
6.3.1 Measurements function of Basic weight

- By default, progress in the order in this description when measuring the weight.

Step	Key (or instruction)	Display
1. Press the power button and check "0" point after that the screen of Display is stabilized.	POWER	0.00g
2. Place the sample to be measure the weight on the weighing pan. (in this Example : 100g)		100.00g
3. Check whether both the weight of a weight and the result measurement value of the Display are the same or not.		100.00g
4. Press the TARE button, and initialize the previous weight.	TARE	0.00g
5. When put a container on the balance and measure the weight of a Sample, except for the weight of the container, first, put the container on and press the TARE button and adjust "0" point.	TARE	0.00g
6. After checking "0" point, put the sample to be measure on the weighing pan. (in this Example : 100g)		100.00g

6.3.2 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. After pressing the power button, adjust so that the balance has the "0" point which is the stabilized value.	Power or TARE	0.00g
2. To press and hold the CAL button, "CAL" letters with a beep appears on the screen, and the value to be calibrated is blinking.	CAL	- - CAL - - - - - - - - - 2000.00g (WBA-3200 model)
3. Put the Calibration Weight of the components of the product on the balance.		2000.00g (WBA-3200 model)

Step	Key(or instruction)	Display
4. The balance automatically progresses the calibration to the actual value measured on it.	TARE	- - - - - - -
5. After the calibration is completed, the measured value is displayed.		2000.00g (WBA-3200 model)
6. To put down the balance weight from the balance, the calibration is completed.		0.00g

- In order to precisely calibrate the balance, the phased weight calibration can be progressed. This is user's option and the external weight of phased size is required. (Weight calibration)

Step	Key(or instruction)	Display
1. The balance is proceeded at "0" point state which is the stabilized value.	Power or TARE	0.00g
2. To press and hold the CAL button, "CAL" letters with a beep appears on the screen, and the value to be calibrated is blinking.	CAL	- - CAL - - - - - - - - - 2000.00g (WBA-3200 model)
3. If the value to be calibrated is appeared on the LCD screen, enter into the phased calibration menu by pressing and holding the MENU button. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	- - CAL - - 3000.00g
4. Put the Calibration Weight of 3,000g on the balance.		3000.00g (WBA-3200 model)
5. The balance automatically progresses the calibration to the actual value measured on it.		3000.00g (WBA-3200 model)
6. If put down the weight, 2000.00g appears on the LCD screen.		2000.00g (WBA-3200 model)
7. Put the Calibration Weight of 2,000g on the balance.		2000.00g (WBA-3200 model)
8. 1000.00g will be blinking on the LCD screen.		1000.00g (WBA-3200 model)
9. Put the Calibration Weight of 1,000g on the balance.		1000.00g (WBA-3200 model)
10. To put down the balance weight from the balance, the calibration is completed.		0.00g
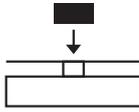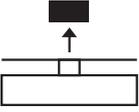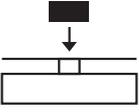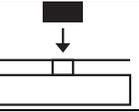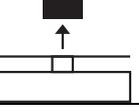
6.3.3 Date set-up

- Because system date is set up, the current date can be always checked on the standby screen.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--ñodE-
2. Briefly press the MENU (MAIN) button again. Check the change of the display screen.	MENU (MAIN)	--bASE-
3. Briefly press the CAL button again.	CAL	-SCALE-
4. Briefly press the MENU (MAIN) button twice.	MENU X 2 (MAIN X 2)	--dATE-
5. To briefly press the CAL button, "Year" can be set.	CAL	YEAr - 12
6. It is possible to move the digits by UNIT button, and the number can be converted by PRINT button.	UNIT : Cursor movement PRINT : Number conversion	
7. To complete the setting of "Year", set the corresponding "Month" by pressing the MENU (MAIN) button.	MENU (MAIN)	ñON--08
8. Like the above, the number of "Month" can be converted by UNIT button and PRINT button.	UNIT : Cursor movement PRINT : Number conversion	
9. To complete the setting of "Month", set the corresponding "Day" by pressing the MENU(MAIN) button.	MENU (MAIN)	dAY-- 10
10. Like the above, the number of "Day" can be converted by UNIT button and PRINT button.	UNIT : Cursor movement PRINT : Number conversion	
11. Once you have set the current date, press the CAL button to return to the previous menu.	CAL	--dATE-
12. To press the TARE button twice, return to the initial menu.	TARE X 2	12:08:22 10:28:50 0.00 g

6.3.4 Time set-up

- Because the current time is set up in the system, the current time can be always checked in the standby screen.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--ñodE-
2. Briefly press the MENU (MAIN) button. Check the change of the display screen.	MENU (MAIN)	--bASE-
3. Briefly press the CAL button.	CAL	-SCALE-
4. Briefly press the MENU (MAIN) button Three times.	MENU X 3 (MAIN X 3)	--TiñE-
5. Briefly pressing the CAL button, "Time" can be set.	CAL	Hour-20
6. It is possible to move the digits by UNIT button, and the number can be converted by PRINT button.	UNIT : Cursor movement PRINT : Number conversion	
7. To complete the setting of "Time", set the corresponding "Minute" by pressing the MENU (MAIN) button.	MENU (MAIN)	ñiñ--15
8. Like the above, the number of "Minute" can be converted by UNIT button and PRINT button.	UNIT : Cursor movement PRINT : Number conversion	
9. To complete the setting of "Minute", set the corresponding "Second" by pressing the MENU (MAIN) button again.	MENU (MAIN)	SEC--50
10. Like the above, the number of "Second" can be converted by UNIT button and PRINT button.	UNIT : Cursor movement PRINT : Number conversion	
11. To return to the previous menu by pressing CAL button on the screen to be set, the setting is completed.	CAL	--TiñE-
12. To press the TARE button twice, return to the initial menu.	TARE	12:08:22 10:28:50 0.00 g

6.3.5 Display Back-Light ON/OFF

- Set up the Back-Light of Display to ON/OFF.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Briefly press the MENU (MAIN) button. Check the change of the display screen.	MENU (MAIN)	--bASE-
3. Briefly press the CAL button.	CAL	-SCALE-
4. Briefly press five times the MENU (MAIN) button.	MENU X 5 (MAIN X 5)	bL-- ON
5. It is possible to select either of ON/OFF/AUT by UNIT button or PRINT button.	UNIT or PRINT	bL-- ON bL--OFF bL--Aut
6. To return to the previous menu by pressing the CAL button in the screen to be set, the setting is completed.	CAL	--bASE-
7. To press once the TARE button, return to the standby screen.	TARE	12:08:22 10:28:50 0.00 g

6.3.6 Buzzer ON/OFF

- Set up the Buzzer to ON/OFF.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Briefly press the MENU (MAIN) button again. Check the change of the display screen.	MENU (MAIN)	--bASE-
3. Briefly press the CAL button again.	CAL	-SCALE-
4. Briefly press six times the MENU(MAIN) button.	MENU X 6 (MAIN X 6)	bEEP ON

Step	Key(or instruction)	Display
5. It is possible to select either of ON/OFF by the UNIT button or the PRINT button.	UNIT or PRINT	**bEEP ON** **bEEPOFF**
6. To return to the previous menu by pressing CAL button in the screen to be set, the setting is completed.	CAL	--bASE-
7. To press once TARE button, return to the standby screen.	TARE	12:08:22 10:28:50 **0.00** g

6.4 Application functions

6.4.1 Coefficient measurement

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

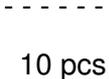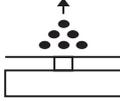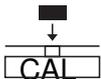| Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Change to the count mode by briefly pressing CAL button.	CAL	--COUNT
3. To briefly press again CAL button, the quantity is blinked.	CAL	0000020 pcs
4. The quantity can be changed by the PRINT button. The quantity is repeated as 10, 20, 50, 100, 150, 200, 250, 500 and 1000 cycle.	PRINT	0000010 pcs
5. Put the selected quantity on the balance. (in this Example : 10pcs)		0000010 pcs
6. To press CAL button after putting the sample as much as the set quantity on, the setting is completed.	CAL	- - - - - - - 10 pcs
7. The sample quantities of the same mass can be understood.		0 pcs
8. To change to the initial menu, press and hold the TARE button.	TARE	0.00g

6.4.2 Density measurement of Solid sample

- The density of solid material can be determined by using buoyancy.

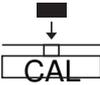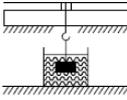| Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Briefly press the CAL button. Check the change of the display screen.	CAL	--COUNT
3. Enter into the density mode by briefly pressing the MENU(MAIN) button.	MENU (MAIN)	dENSItY
4. Enter into the density measurement mode of solid by briefly pressing the CAL button.	CAL	-SoLId-
5. Start the density measurement program of solid by briefly pressing the CAL button.	CAL	00.99988
6. Enter into the weight measurement mode in the air by briefly pressing the CAL button.	CAL	AIr 0.00 g
7. Put the sample to be measured on the balance, and measure the weight by briefly pressing the CAL button.	CAL	AIr 118.45 g
8. To put down the sample after saving the measurement value by briefly pressing the CAL button, enter into the weight measurement mode in liquid.	CAL	LIqUId 118.45 g LIqUId 0.00 g
9. In order to measure the weight in the water, the mass of the sample in the water can be measured by placing the sample as shown in Figure.		LIqUId 20.70 g
10. To briefly press the CAL button, the measured value is saved and the density measurement value is automatically displayed.	CAL	d ---g-cc 1.21158
11. To change to the initial menu, press and hold the TARE button.	TARE	12:08:22 10:28:50 0.00 g 238
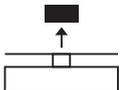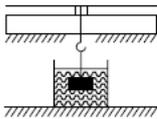
6.4.3 Density measurement of Liquid sample

- The density of the liquid sample can be measured by entering the volume of a sample on the balance.

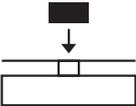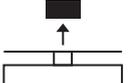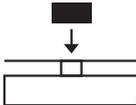| Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Briefly press the CAL button. Check the change of the display screen.	CAL	--COUNT
3. Enter into the density mode by briefly pressing the MENU(MAIN) button.	MENU (MAIN)	dENSity
4. Enter into the density measurement mode of solid by briefly pressing the CAL button.	CAL	-SoLid-
5. Enter into the density mode of liquid by briefly pressing the MENU(MAIN) button.	MENU (MAIN)	-LI9Uid
6. Briefly press CAL button and enter the constant vale of the standard density of the liquid that you want to measure.	CAL	1000000
7. It is possible to move the digits by UNIT button, and the number can be converted by PRINT button.	UNIT : Cursor movement PRINT : Number conversion	
8. Briefly press the CAL button and enter into the weight measurement mode in the air.	CAL	Air 0.00 g
9. Put the sample to be measured on the balance, and measure the weight by briefly pressing the CAL button.	CAL	Air 118.45 g LI9Uid 118.45 g
10. Put down the sample from the balance and measure the mass in the water by placing as shown in Figure.		LI9Uid 20.70 g LI9Uid 0.00 g
11. To briefly press the CAL button, the measured value is saved and the density measurement value is automatically displayed.	CAL	d --- g·cc 977300
12. To change to the initial menu, press and hold the TARE button.	TARE	12:08:22 10:28:50 0.00 g

6.4.4 Dynamic measurement

- The value of moving weight is measured by the average of measured weight values within a fixed time.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Briefly press the CAL button again. Check the change of the display screen.	CAL	--COUNT
3. Enter into the dynamic weight measurement mode by briefly pressing twice the MENU(MAIN) button.	MENU X 2 (MAIN X 2)	dYNAMIC
4. Briefly press the CAL button again and set up the time needed for the measurement of the dynamic weight.	CAL	rd--- 10
5. It is possible to move the digits by UNIT button, and the number can be converted by PRINT button. When the cursor selects the entire, 1,2,5,10,15,20,30,40,50 and 60 are changed to Cycle by PRINT button.	UNIT : Cursor movement PRINT : Number conversion	rd--- 10
6. To press the CAL button on the time screen you want to set, the setting is completed.	CAL	STArT
7. Briefly press the CAL button again, and put the dynamic weight to be measured on the balance as the time as the set time.	CAL	984.23 g
8. If the weight is measured for the same time as set time and the measurement is completed, the fixed average of the measured value automatically appears.		984.23 g
9. If the measured value is initialized by pressing the TARE button and press the CAL button, the dynamic weight can be measured again.		0.00 g
10. To change to the initial menu, press and hold the TARE button.	TARE	12:08:22 10:28:50 0.00 g

6.4.5 Comparative measurement

- The current weight value is indicated as a weight % based on the measured weight.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed.(WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Briefly press the CAL button again. Check the change of the display screen.	CAL	--COUNr
3. Enter into the dynamic weight measurement mode by briefly pressing three times the MENU(MAIN) button.	MENU X 3 (MAIN X 3)	PErCENr
4. Briefly press the CAL button again, and select the comparative measurement mode.	CAL	SAnPLE
5. To briefly press the CAL button again, enter into the comparative measurement mode. If the display flashes, put the sample for comparative measurement on the balance.	CAL	SAnPLE
7. Put down the sample, and put other sample to be compared on the balance. The weight of other Sample is displayed as a percentage based on the weight value of the sample measured firstly.		79.00 %
8. To change to the initial menu, press and hold the TARE button.	TARE	12:08:22 10:28:50 0.00 g

- Manual comparative measurement method: Indicate the ratio measurement value of other sample as % by manually entering the weight of sample that may be compared.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--nodE-
2. Briefly press the CAL button. Check the change of the display screen.	CAL	--COUNr
3. Enter into the dynamic weight measurement mode by briefly pressing three times the MENU(MAIN) button.	MENU X 3 (MAIN X 3)	PErCENr

Step	Key(or instruction)	Display
4. Briefly press the CAL button again, and select the comparative measurement mode.	CAL	SAmPLE
5. To briefly press the MENU(MAIN) button, enter into manually entered comparative measurement mode	MENU (MAIN)	INPut
6. To briefly press the CAL button, the screen that manually enters the measurement value.	CAL	100.00
7. It is possible to move the digits by UNIT button, and the number can be converted by the PRINT button.	UNIT : Cursor Movement PRINT : Number conversion	
8. If entering the weight value and briefly pressing the CAL button, the weight of other sample that is put on the balance is displayed as a percentage based on the entered value.	CAL	
9. To change to the initial menu, press and hold the TARE button.	TARE	12:08:22 10:28:50 0.00 g 238℃

6.4.6 Setting and releasing of metering unit

- The use of all metering unit is not allowed due to the establishment of a legal metering unit. Accordingly, when using this product, the setting and releasing system is supported so that can use by releasing the unit that is regulating in each country.

Step	Key(or instruction)	Display
1. To press and hold the MENU button, the beep is generated, and LCD screen is changed. (WBA-620 Model is the MAIN Button.)	MENU (MAIN)	--ñodE-
2. Briefly press the Menu button again. Check the change of the display screen.	MENU (MAIN)	--bASE-
3. Briefly press the CAL button. Check the change of the display screen.	CAL	-SCALE-
4. Briefly press the Menu(MAIN) button. Enter into the unit change mode.	MENU (MAIN)	--UNIT-
5. To briefly the CAL button, unit and the unit ON/OFF selection will appear.	CAL	ct- ON
6. The change of ON/OFF is possible by the PRINT button.	PRINT	ct-OFF

Step	Key(or instruction)	Display
7. If changing ON/OFF by the PRINT button and briefly pressing the MENU(MAIN) button, the value indicated on DISPLAY screen is saved, and the screen is changed to ON/OFF setting of the next unit.	MENU (MAIN)	o2- ON
8. To briefly press the MENU(MAIN) button, the unit of ct, oz, ozt, dwt, GN, lb, N, dr, tlT, tls, tlH, T, T/A/R, /A/R, ms, bat, mom, /lb and kg is repeated in cycle.	MENU (MAIN)	
9. To press the TARE button, return to previous mode, and to briefly press it three times, change to the initial menu.	TARE	12:08:22 10:28:50 0.00 g

6.5 Unit of Balance

- The change of the unit is possible by UNIT button, it is displayed as the condition applied to the standby screen or the measurement results.

Unit signal	Unit	Unit Exchange rates
g	gram	1
ct	carat	5
oz	ounce	0.03527396200
ozt	troy ounce	0.0.315074700
dwt	pennyweight	0.64301493100
GN	grain	15.43235835000
lb	pound	0.00220462260
N	newton	0.00980654189
dr	dram	0.56438222222
tlT	taiwan Tel	0.02666666000
tls	Singapore Tel	0.02645544638
tlH	Hong Kong Tel	0.02671725000
T	tola	0.08573532418
T/A/R	Tola/Ana/ rati	T.A.R
/A/R	Tola/Mna/ rati	T.M.R
ms	Mesghal	0.21700000000
bat	bat	0.06578947437
mom	momme	0.26670000000
/lb	Parts per pound	1.12876677120
kg	Kilogram	0.00100000000

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	✓ 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	✓ 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	✓ 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-320	WBA-620
Weighing Range	0,001 ~ 3200 g	0,001 ~ 6200 g
Weighing Plate	Ø 90 mm	Ø 128 mm
Read-Out [d]	0,001 g	
Reproducibility	0,001 g	
Linearity	0,001 g	
Permissible Temperature	5,0 ~ 35℃	
Weight Mode	% Mode and Available g-/ ct-/ GN-/ dwt-/ etc…	
Counting Mode	Available Counting & Weighing Mode	
Calibration	External Calibration	
	Included 200 g Calibration Weight	Included 500 g Calibration Weight
Display	Digital Super Size LCD with Back - Light Function	
Dimension (wxdxh) & Net Weight	223 x 345 x 331 mm / 3,6 kg	223 x 345 x 331 mm / 5,7 kg
Power supply	DC 12 V, with AC 220V Adapter, 60Hz	

Specification / Model	WBA-3200	WBA-6200
Weighing Range	0,01 ~ 3200 g	0,01 ~ 6200 g
Weighing Plate	168x168 mm	
Read-Out [d]	0,01 g	
Reproducibility	0,01 g	
Linearity	0,01 g	
Permissible Temperature	5,0 ~ 35℃	
Weight Mode	% Mode and Available g-/ ct-/ GN-/ dwt-/ etc…	
Counting Mode	Available Counting & Weighing Mode	
Calibration	External Calibration	
	Included 2 kg Calibration Weight	none
Display	Digital Super Size LCD with Back - Light Function	
Dimension (wxdxh) & Net Weight	195 x 295 x 90 mm / 2,6 kg	
Power supply	DC 12 V, with AC 220V Adapter, 60Hz	

10 Certificate

<div style="border:2px solid black; padding:20px;">

Certificate

for

Wisd

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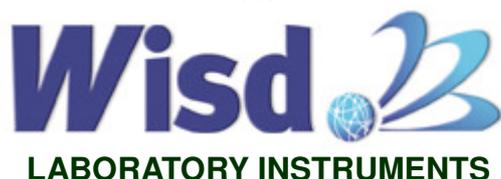
The quality and all features were checked by the manufacturer before the shipment.

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
Am Bildacker 16
D-97877 Wertheim
TEL: +49-9342-9301-0
FAX: +49-9342-9301-77
Email: info@witeg.de
www.witeg.de

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