

Hochleistungsfeuchtebestimmer
High-performance moisture analyzer

Bedienungsanleitung
Operating Manual



www.witeg.de

Bitte sorgfältig lesen und genau beachten!
Please study carefully and follow step by step!

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1 General

Thank you for purchasing our WBA High-performance Moisture Analyzer. You did a good choice buying a electronic witeg 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.

WBA-110M



- 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 sub-surface 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 operates on the basis of the principle of thermogravimetry as a high-performance moisture tester, and evaporates the moisture by evenly and rapidly heating the sample to be measured with a halogen lamp, and measures the moisture content and the solids, etc. from the change of mass that occurs at this time.

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

1. Because this product is equipped with the high-precision sensor which uses for the precision electronic scales, the reproducibility and the degree of precision are excellent.
2. Since the innovative technology such as a halogen lamp heating method has been applied, the rapid and uniform heating is possible.
3. The samples are rapidly dried by the round infrared halogen lamp, and the heat is evenly transferred.
4. Since the self-test function has been mounted, this instrument itself can check the problem such as the electrical circuit and the temperature control.
5. Because LCD screen with clear and wide Back-light feature is built-in, it is easy to check the current status of this product.
6. The evaporation rate of moisture is displayed in real time and that information is provided to user.
7. RS-232C communication cable port has been factory-installed, and data can be output and transmitted through the port. (Option)
8. The temperature range is 40°C~199°C, and it can be increased and decreased at 1°C unit.
9. The input of this product is convenient by applying the simple icon that gives a priority to user convenience.

10. The calibration function for heating temperature supports more accurate measurement.
11. Since 16 kinds of parameters have been stored, the user's convenience is supported.
12. The Stainless Steel Pan can be installed or removed, so it is easy to keep cleanliness.
13. Because this product is equipped with the leveling screws, user can directly adjust the horizontality of the product at the installation position.

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. This product is installed so that the equilibrium state of the product is maintained through the equilibrium regulator at the bottom of the product.
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. Since a part of the moisture tester is very hot, if using near flammable materials, there is a fire danger. Please use this product at the place where there are no flammable materials, and do not put anything on the top of the heater cover.
9. Please do not use this product in small and enclosed space. If this product is used in small and enclosed space, because the hot air does not circulate, it can be heated above the set temperature.
10. Please use the sample pan after sufficiently cooling its heat. If the sample pan is hot, it is difficult to obtain the accurate results because the moisture is evaporated before measuring.
11. Please do not look at the halogen lamp which is operating. This may cause the eyesight damage.

12. If you are replacing a halogen lamp, please replace it after turning off the power switch and removing the power cable. If the power supply has been connected, there is the danger of electric shock.
13. If you have used the halogen lamp for more than 5000 hours, please replace it with a new lamp.
14. When using this product, please wear the appropriate protective equipment. If the use tools have been heated after measuring the samples, user can be received a burn or a wound.

4 Accessoires

4.1 Standard scope of delivery

WBA – 110M, 1 pc.

Calibration Weight, 1 pc.

Sample Plate, 10 pcs.

Scale tray brackets, 1 pc.

The triangle scale frame, 1 pc.

Wind cover, 1 pc.

Operating manual, 1 pc.

4.2 Optional accessories

DH.WBA0083	Thermal Printer, Paper Roll, „WBA-083“, Included Cable module, 1 x Paper Roll
DH.WBA0084	Thermal Paper Package, 5 x Paper Roll, for „WBA-083“
DH.WBA0770	Thermal Printer, Label Paper Roll, „WBA- 770“, Included Cable Module, 1 x Label Paper Roll
DH.WBA0771	Thermal Label Paper Package, 5 x Label Paper Roll, for „WBA-770“
DH.WBA0005	Sample Plates, $\Phi 90$ mm, 10 pcs.

5 Product description

5.1 General survey

No.	Name	Description
1	Power connections	Connection piece of Power cord
2	RS232 connection	Port for connection with print by cable
3	Bubble Level	Check the Equilibrium
4	Adjuster for equilibrium	Adjust equilibrium
5	Display LCD	Input and operation information are displayed
6	Controller	Set and Check operation
7	Heater Cover Handle	Users Safety Device
8	Heater Cover	A halogen lamp equipped with a cover

5.1 General survey

Name	Description
MENU	Select the System Menu.
CONVERSION	Convert the measurement results.
RESET	Short press: Return to the Measuring Mode. Long press: Calibrate the balance.
START / STOP	Start/Stop the set operation.
TARE	Initialize the weight of the container. Return to the previous Menu.
ENTER	Check the current setting and go to the next step.
ON / OFF	Connect/Cut off the power supply.
UP	Add the values.
DOWN	Reduce the value.

6 Product usage

6.1 Display

Icon	Description	Icon	Description
%	The percentage of dry weight		Heated mode
m%	The percentage of moisture		Rapid heating mode
g	Gram		Standard mode
pcs	Count		Stop heated mode
oz	Ounce		Timing stop mode
ct	Carat		Manual stop mode
188°C	Temperature		Automatic
88:88 T	Set Time and Heating Time		Heated state

6.2 Preparation stage

6.2.1 Assembly of the product

Please proceed in the following order before using the product:

- Open the Heater cover of the product, and put the Stainless Steel plate corresponding to 5 in the Figure on it.
- Place the Wind cover corresponding to 4 in the Figure on the plate.
- After making sure that the cover is correctly mounted, put the Scale tray bracket with a pan handle corresponding to 3 in the Figure on it.
- Put the triangle scale frame corresponding to 2 in the Figure on it.
- Before measuring the weight of the sample, put the Sample Plate corresponding to 1 in the Figure on the frame, and Start the measurement of the samples.

6.2.2 Horizontal Control

- 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

Proceed in order in this description in the case of the basic measurement.

Step	Key / instruction	Display
1. Press the power button and check "0.000g" point after that the screen of Display is stabilized.	ON	
2. Press the MENU button, and set up "0" point state by pressing the ENTER button after confirming "0" indication of the Display.	MENU ENTER	
3. Open the cover of Heater, and put the sample on the Sample Plate. (At this time, the amount of sample must be more than 2g.) (in this Example : 2.645g)		
4. Pressing START/STOP button, it can be identified that the temperature and time are increased while the halogen lamp is turned on and is turned off again.	START	

5. If the test is completed, the heating lamp will be automatically shut down along with a beep. (At this time, the Sample Plate may be hot, so do not directly touch it.)	-	
6. Pressing the RESET button, return to the initial state after completing the test.	-	

6.3.2 Measurements function

- 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 / instruction	Display
1. After pressing the power button, adjust so that the balance has the "0" point which is the stabilized value.	ON	
2. Pressing and holding the REST button, "CAL" letters along with a beep appears on the screen, and the value to be calibrated is blinking.	RESET	
3. Put the Calibration Weight of the components of the product on the balance.		
4. The balance automatically progresses the calibration to the actual value measured on it. After the calibration is completed, the measured value is displayed.	-	
5. If putting down the balance weight from the product, the calibration is completed.		

6.3.3 Measurements function

- The parameters are continuously set up because each Mode is connected.
- The heating mode, the stop mode, the temperature setting mode, and the stop time setting mode constitute one parameter, and each parameter is differently set up for the user convenience, and user can use by calling the saved parameters.
- Total 16 parameters of the numbers of 0 thru 9 and the alphabetic characters of A thru F can be set up.
- However, the parameter 0 has been saved as the standard heating mode, auto-stop mode, 120°C, and the non-setting of timer. Since this is the value that has been stored at the time of the factory shipment, it cannot be changed.

Heating Mode

- This mode is the first step of the parameter setting, and sets the heating rate.

Step	Key / instruction	Display
1. After pressing the power button, adjust so that the balance has the "0" point which is the stabilized value.	ON	
2. Pressing the MENU button, the parameter 0 is blinked. Pressing the UP button, the parameter 0 is changed to parameter 1.	MENU UP	
3. It is possible to move to the parameter that user wants by the UP button. (in this example : Parameter 2)	UP	
4. Press the ENTER button on the desired parameter figures / alphabet letters, and then change each mode.	ENTER	
5. The first setting mode is the heating mode and the setting of the corresponding mode is displayed while blinking the icon of Display. Pressing the UP button, the menu of the heating mode is changed while repeating.	UP	

6. Standard Heating Mode - Rapid Heating Mode - Slow Heating Mode -	UP	
7. Pressing the ENTER button after setting the desired heating rate, it is changed to the Stop mode.	ENTER	

Stop Mode

- This mode is the first step of the parameter setting, and sets the heating rate.

Step	Key / instruction	Display
1. The blinking of the icon on Display is moved to the next icon, and it is changed to the stop method setting mode. Pressing the UP button, the menu of the stop method is changed while repeating.	UP	
2. Auto Stop mode - Manual Stop mode - Time Setting Stop mode	UP	
3. Pressing the ENTER button after setting the desired stop method, it is changed to the temperature setting mode.	ENTER	
4. But, the Display for the time setting is activated only when setting to the time setting stop mode.	-	

Temperature Setting Mode

- This mode is the third step of the parameter setting, and sets the temperature of operation.

Step	Key / instruction	Display
1. The blinking of the icon on Display is moved to the next icon, and it is changed to the temperature setting mode. Pressing the UP/DOWN button, the number of temperature is changed, and pressing the ENTER button again, the cursor of digit number is moved.	UP/DOWN ENTER	

2. Pressing the ENTER button after entering the set temperature, the entered parameter is saved. However, it is changed to the Time Setting mode when setting from the Stop mode to the Time Setting Stop mode.	ENTER	
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Stop Time Setting mode

- This mode is the final step of the parameter setting, and this menu is activated when setting from the Stop mode to the Stop Time mode.

Step	Key / instruction	Display
1. It is progressed as the condition when setting from the Stop mode to the Time Setting Stop mode. If the icon for time setting is blinked, change the number of time by the UP/DOWN button, and pressing the ENTER button, the cursor of digit number is moved.	UP/DOWN ENTER	
2. Enter the time to be stopped after heating operation, and then finally, pressing the ENTER button, the entered parameters are saved.	ENTER	

6.3.4 Call Parameters

- User can set up total 16 parameters of the numbers of 1 thru 9 and the alphabetic characters of A thru F.
- In order to call the parameter that the value of the desired pattern is previously saved, check the value while pressing ENTER button after entering to the menu in the same way as its setting method, and then pressing the ENTER button to the final step, the desired parameter is called.
- After pressing the ENTER button in the final step, user can apply the called parameter by pressing the START button when the idle screen is displayed.

6.3.5 Conversion of Weight Unit

- Pressing CONVERSION „g %“ button, the unit is changed in order of g, m%, %, each time that you press the button.
- g : Current weight

- m% : Moisture percentage, the value that expresses the ratio as a percentage by dividing
- the evaporated mass by the first mass.
- % : Pure mass ratio, First mass (100%) – moisture percentage (–%) = Percentage value

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-110M
Weighing Range	0,001 ~ 110 g
Weighing Plate	Ø 90 mm
Read-Out [d]	0,01 mg
Reproducibility	0,1 mg
Permissible Temperature	5,0 ~ 35°C
Heat Source / Temp. Sensor	Halogen Lamp / PT100 Sensor
Temp. Range / Solution	40 ~ 199°C / 1°C
Moisture Range / Readability	0,00 ~ 100% / 0,01%
Dry Residual	Range: 0,00 ~ 100% Read ability: 0,01%
ATRO	100~999%, 0~999%
Timer / Auto-stop	1~99 min (Resolution: 1 Sec.) Auto-stop 0,1~9,9% within 1 min
Number of Storage	15
Calibration	External Calibration Included 100 g Calibration Weight
Display	Digital LCD with Back - Light Function
Dimension (W x D x H) & Net Weight	180 x 200 x 380 mm / 5,8 kg
Power Consumption	400 W
Power Consumption	AC 220V, 50/60Hz

1 Allgemeines

Vielen Dank für den Kauf unseres WBA Hochleistungs-Feuchtebestimmer. Mit dem Kauf eines elektronischen witeg Produkts haben Sie eine gute Entscheidung getroffen.

Bitte lesen Sie vor der Nutzung diese Gebrauchsanleitung und benutzen Sie das Gerät ordnungsgemäß.

Zum Schutz des Nutzers und des Produkts beachten Sie bitte die Sicherheitshinweise in Kapitel zwei. Bitte bewahren Sie die Bedienungsanleitung für zukünftige Einsichtnahme gut auf und händigen Sie sie aus, wenn Sie das Gerät an Dritte weitergeben.

witeg behält sich vor ohne vorherige Ankündigung das Gehäuse zu verändern oder andere Veränderungen zur Verbesserung der Qualität und Effizienz vor zu nehmen.

2 Sicherheitshinweise

2.1 Beschreibung der Symbole



WARNUNG

Informationen zur Vermeidung von Verletzungen oder tödlichen Unfällen.

ACHTUNG

Sicherheitsanweisung zur Vermeidung von Schäden am Produkt.



ACHTUNG

Informationen über technische Parameter.

Umwelt

Informationen zur Betriebsumgebung.



WARNUNG vor Explosionen

Sicherheitsanweisung zur Vermeidung von Explosionen.

2.2 Instructions

Für eine sichere und fehlerfreie Nutzung des Geräts ist es unabdingbar, dass sie die folgenden Hinweise aufmerksam lesen und bei der Nutzung befolgen.



- Verbinden Sie das Gerät nur mit der passenden stromquelle. Bitte beachten Sie hierzu das Typenschild.
 - Nutzen Sie das Gerät nur in Stromkreisen mit Fehlerstromschutzschalter.
 - Prüfen Sie das Stromkabel bevor Sie es in die Steckdose stecken.
 - Nutzen Sie keine Mehrfachsteckdosen um das Stromkabel zu verlängern.
 - Nutzen Sie nur Verlängerungskabel mit ausreichendem Leitungsquerschnitt.
 - Fassen Sie das Gerät während des Betriebs nicht mit nassen Händen an, da dies zu einem elektrischen Schlag führen kann.
 - Erzeugt das Gerät ungewöhnliche Geräusche, Gerüche oder Qual ziehen Sie den Hauptstecker und kontaktieren Sie sofort den Hersteller oder Ihren Lieferanten.
 - Ziehen Sie den Stecker vor jeder Reinigung oder Wartung.
 - Die Verantwortung bei der Nutzung von Strahlung oder kontaminierten Proben liegt alleine bei Ihnen.
-
- Es ist wichtige, dass das Gerät auf einem horizontalen, stabilen und festen Untergrund steht um Vibrationen zu vermeiden.
 - Stellen Sie sicher, dass das Gerät nicht wegrutschen kann.
 - Um einen Hitzestau und Feuer zu vermeiden, stellen Sie sicher, dass das Gerät genug Freiraum zur Luftzirkulation hat.
 - Vermeiden Sie direkte Sonneneinstrahlung.
 - Nutzern Sie das Gerät nicht in der Nähe von hochentflammbaren Materialien.
 - Stellen Sie das Gerät nicht im Freien auf.
 - Stellen Sie das It Gerät an einem gut beleuchteten Platz auf um Unfälle durch Bedienungsfehler zu vermeiden.
 - Das Aufstellen an feuchten oder staubigen Plätzen kann Überhitzung, Feuer oder Kurzschlüsse verursachen.



- Nutzen Sie das Gerät nicht in Bereichen mit potenziell explosiver Atmosphäre.



- Reparaturen und Änderungen sollten nur durch von **witeg** autorisiertem Personal durchgeführt werden.
Bei Zuwiderhandlung erlischt die Garantie.

- Nutzen Sie das Gerät nur wenn Sie die Sicherheitshinweise komplett gelesen haben.
- Diese Gerät sollte nur von Personen benutzt werden, die mit den Sicherheitsbestimmungen in Labor vertraut sind.
- Achten Sie darauf, dass keine Flüssigkeiten auf die Steuerung oder in das Gehäuse gelangen.
- Halten Sie das Gerät sauber für eine lange Lebensdauer.
- Tragen Sie entsprechende Sicherheitskleidung während der Nutzung.
- Ziehen Sie den Stecker, wenn sie das Gerät längere Zeit nicht nutzen möchten.

2.3 Produktbeschreibung

Dieses Produkt arbeitet auf Basis des Prinzips der Thermogravimetrie als Hochleistungsfeuchtigkeitstester, und verdampft die Feuchtigkeit durch gleichmäßiges und schnelles Aufheizen der Probe um sie mit einer Halogenlampen zu vermessen, und misst den Feuchtegehalt und den Feststoff, usw. durch die Veränderung der Masse, die in dieser Zeit stattfindet.

Dieses Produkt wurde unter Berücksichtigung von Komfort und Sicherheit bei der Nutzung entwickelt und hergestellt und hat die folgenden Eigenschaften:

1. Da das Gerät mit einem Hochpräzisionssensor ausgestattet ist, der ein **precision electronic scales** verwendet, ist die Reproduzierbarkeit und der Präzisionsgrad exzellent.
2. Da innovative Technologie wie die Halogenlampenheizmethode angewandt wird ist eine schnelle und einheitliche Aufheizung möglich.
3. Die Proben werden durch die runde Infrarot Halogenlampe schnell getrocknet und die Hitze wird gleichmäßig verteilt.
4. Da eine Selbsttestfunktion eingebaut wurde, kann das Instrument sich selbst den Stromkreis und die Temperatursteuerng prüfen.
5. Da das Gerät ein klares und großes LCD Display mit Hintergrundbeleuchtung besitzt, ist es leicht den aktuellen Status zu prüfen.
6. Die Verdampfungsrate der Feuchtigkeit wird dem Nutzer in Echtzeit angezeigt.
7. Dear RS-232C-Anschluss wurde werksseitig eingebaut, wodurch Daten ausgegeben und übertragen werden können. (Optional)
8. Der Temperaturbereich liegt bei 40°C bis 199°C und in 1°C-Schritten erhöht oder reduziert werden.
9. Die Eingabe bei diesem Produkt ist bequem.
10. Die Kalibrierungsfunktion für die Aufheiztemperatur unterstützt akuratre Mesungen.

11. Der Nutzungskomfort wird durch unterstützt, dass 16 Parameterarten gespeichert werden.
12. Die Edelstahlwanne kann eingebaut oder entfernt werden, sodass die Reinigung sehr einfach ist.
13. Da das Produkt mit Ausgleichsschrauben ausgestattet ist, kann der Nutzer das Produkt auf den Installationsort einstellen.

3 Aufstellen des Geräts und Inbetriebnahme

1. Bitte legen Sie das Produkt nicht auf den Boden und setzen Sie es keine Erschütterungen aus. Dies kann Schäden im Produkt verursachen.
2. Stellen Sie das Gerät auf einen harten, flachen und stabilen Untergrund.
3. Vermeiden Sie direkte Sonneneinstrahlung und Gefahrenstellen.
4. Um das Risiko von Kurzschlüssen zu minimieren, setzen Sie das Gerät keiner Feuchtigkeit oder organischen Lösungsmitteln aus.
5. Das Produkt ist **This product is installed so that the equilibrium state of the product is maintained through the equilibrium regulator at the bottom of the product.**
6. Dieses Produkt wurde für den Betrieb bei Nennspannung konstruiert. Bitte prüfen Sie daher vor der Installation die elektrische Spannung.
7. Bitte nur mit dem mitgelieferten Originalstromkabel schließen.
8. Da der Feuchtemesser sehr heiß werden kann besteht ein Feuerrisiko, wenn das Gerät in der Nähe von entflammenden Materialien betrieben wird. Bitte nutzen Sie dieses Produkt nicht in der Nähe von entflammenden Materialien und stellen Sie nichts auf den Deckel des Geräts.
9. Bitte nutzen Sie das Produkt nicht in kleinen, geschlossenen Räumen. Wenn das Gerät in einem solchen Raum genutzt wird kann die heiße Luft nicht zirkulieren und die Temperatur kann über die eingestellte Temperatur steigen.
10. Bitte fassen Sie die Probenschale erst an nachdem diese ausreichend abgekühlt ist. Die Probenschale ist heiß, es ist schwer akkurate Ergebnisse zu erhalten da die Feuchtigkeit vor dem Messen verdampft.
11. Bitte schauen Sie nicht direkt in die leuchtende Halogenlampe. Dies kann Sehschäden verursachen.
12. Tauschen Sie die Halogenlampe erst aus nachdem Sie das Gerät ausgeschaltet haben und den Stecker gezogen haben. Wenn das Stromkabel noch angeschlossen ist, besteht die Gefahr eines elektrischen Schocks.
13. Wenn die Halogenlampe mehr als 5000 Stunden geleuchtet hat, ersetzen Sie diese bitte.

14. Bitte tragen Sie geeignete Schutzkleidung, wenn Sie das Gerät benutzen. Nutzer können durch erhitzte Teile Verbrennungen oder Wunden erhalten.

4 Zubehör

4.1 Standard Lieferumfang

WBA – 110M, 1 St.

Kalibrierungsgewicht, 1 St.

Wiegeplatte, 10 St.

Scale tray brackets, 1 St.

The triangle scale frame, 1 St.

Windschutz, 1 St.

Bedienungsanleitung, 1 St.

4.2 Optionales Zubehör

DH.WBA0083	Thermal Printer, Paper Roll, „WBA-083“, Included Cable module, 1 x Paper Roll
DH.WBA0084	Ersatzpapier, 5 x Papierrollen, für „WBA-083“
DH.WBA0770	Thermal Printer, Label Paper Roll, „WBA-770“, Included Cable Module, 1 x Label Paper Roll
DH.WBA0771	Thermal Label Paper Package, 5 x Label Paper Roll, für „WBA-770“
DH.WBA0005	Wägeplatten, Ø90 mm, 10 St.

5 Produktbeschreibung

5.1 General survey

No.	Name	Description
1	Power connections	Connection piece of Power cord
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4	Adjuster for equilibrium	Adjust equilibrium
5	Display LCD	Input and operation information are displayed
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START / STOP	Start/Stop the set operation.
TARE	Initialize the weight of the container. Return to the previous Menu.
ENTER	Check the current setting and go to the next step.
ON / OFF	Connect/Cut off the power supply.
UP	Add the values.
DOWN	Reduce the value.

6 Product usage

6.1 Display

Icon	Description	Icon	Description
%	The percentage of dry weight		Heated mode
m%	The percentage of moisture		Rapid heating mode
g	Gram		Standard mode
pcs	Count		Stop heated mode
oz	Ounce		Timing stop mode
ct	Carat		Manual stop mode
188°C	Temperature		Automatic
88:88 T	Set Time and Heating Time		Heated state

6.2 Preparation stage

6.2.1 Assembly of the product

Please proceed in the following order before using the product:

- Open the Heater cover of the product, and put the Stainless Steel plate corresponding to 5 in the Figure on it.
- Place the Wind cover corresponding to 4 in the Figure on the plate.
- After making sure that the cover is correctly mounted, put the Scale tray bracket with a pan handle corresponding to 3 in the Figure on it.
- Put the triangle scale frame corresponding to 2 in the Figure on it.
- Before measuring the weight of the sample, put the Sample Plate corresponding to 1 in the Figure on the frame, and Start the measurement of the samples.

6.2.2 Horizontal Control

- 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

Proceed in order in this description in the case of the basic measurement.

Step	Key / instruction	Display
1. Press the power button and check "0.000g" point after that the screen of Display is stabilized.	ON	
2. Press the MENU button, and set up "0" point state by pressing the ENTER button after confirming "0" indication of the Display.	MENU ENTER	
3. Open the cover of Heater, and put the sample on the Sample Plate. (At this time, the amount of sample must be more than 2g.) (in this Example : 2.645g)		
4. Pressing START/STOP button, it can be identified that the temperature and time are increased while the halogen lamp is turned on and is turned off again.	START	

5. If the test is completed, the heating lamp will be automatically shut down along with a beep. (At this time, the Sample Plate may be hot, so do not directly touch it.)	-	
6. Pressing the RESET button, return to the initial state after completing the test.	-	

6.3.2 Measurements function

- 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 / instruction	Display
1. After pressing the power button, adjust so that the balance has the "0" point which is the stabilized value.	ON	
2. Pressing and holding the REST button, "CAL" letters along with a beep appears on the screen, and the value to be calibrated is blinking.	RESET	
3. Put the Calibration Weight of the components of the product on the balance.		
4. The balance automatically progresses the calibration to the actual value measured on it. After the calibration is completed, the measured value is displayed.	-	
5. If putting down the balance weight from the product, the calibration is completed.		

6.3.3 Measurements function

- The parameters are continuously set up because each Mode is connected.
- The heating mode, the stop mode, the temperature setting mode, and the stop time setting mode constitute one parameter, and each parameter is differently set up for the user convenience, and user can use by calling the saved parameters.
- Total 16 parameters of the numbers of 0 thru 9 and the alphabetic characters of A thru F can be set up.
- However, the parameter 0 has been saved as the standard heating mode, auto-stop mode, 120°C, and the non-setting of timer. Since this is the value that has been stored at the time of the factory shipment, it cannot be changed.

Heating Mode

- This mode is the first step of the parameter setting, and sets the heating rate.

Step	Key / instruction	Display
1. After pressing the power button, adjust so that the balance has the "0" point which is the stabilized value.	ON	
2. Pressing the MENU button, the parameter 0 is blinked. Pressing the UP button, the parameter 0 is changed to parameter 1.	MENU UP	
3. It is possible to move to the parameter that user wants by the UP button. (in this example : Parameter 2)	UP	
4. Press the ENTER button on the desired parameter figures / alphabet letters, and then change each mode.	ENTER	
5. The first setting mode is the heating mode and the setting of the corresponding mode is displayed while blinking the icon of Display. Pressing the UP button, the menu of the heating mode is changed while repeating.	UP	

6. Standard Heating Mode - Rapid Heating Mode - Slow Heating Mode -	UP	
7. Pressing the ENTER button after setting the desired heating rate, it is changed to the Stop mode.	ENTER	

Stop Mode

- This mode is the first step of the parameter setting, and sets the heating rate.

Step	Key / instruction	Display
1. The blinking of the icon on Display is moved to the next icon, and it is changed to the stop method setting mode. Pressing the UP button, the menu of the stop method is changed while repeating.	UP	
2. Auto Stop mode - Manual Stop mode - Time Setting Stop mode	UP	
3. Pressing the ENTER button after setting the desired stop method, it is changed to the temperature setting mode.	ENTER	
4. But, the Display for the time setting is activated only when setting to the time setting stop mode.	-	

Temperature Setting Mode

- This mode is the third step of the parameter setting, and sets the temperature of operation.

Step	Key / instruction	Display
1. The blinking of the icon on Display is moved to the next icon, and it is changed to the temperature setting mode. Pressing the UP/DOWN button, the number of temperature is changed, and pressing the ENTER button again, the cursor of digit number is moved.	UP/DOWN ENTER	

2. Pressing the ENTER button after entering the set temperature, the entered parameter is saved. However, it is changed to the Time Setting mode when setting from the Stop mode to the Time Setting Stop mode.	ENTER	
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Stop Time Setting mode

- This mode is the final step of the parameter setting, and this menu is activated when setting from the Stop mode to the Stop Time mode.

Step	Key / instruction	Display
1. It is progressed as the condition when setting from the Stop mode to the Time Setting Stop mode. If the icon for time setting is blinked, change the number of time by the UP/DOWN button, and pressing the ENTER button, the cursor of digit number is moved.	UP/DOWN ENTER	
2. Enter the time to be stopped after heating operation, and then finally, pressing the ENTER button, the entered parameters are saved.	ENTER	

6.3.4 Call Parameters

- User can set up total 16 parameters of the numbers of 1 thru 9 and the alphabetic characters of A thru F.
- In order to call the parameter that the value of the desired pattern is previously saved, check the value while pressing ENTER button after entering to the menu in the same way as its setting method, and then pressing the ENTER button to the final step, the desired parameter is called.
- After pressing the ENTER button in the final step, user can apply the called parameter by pressing the START button when the idle screen is displayed.

6.3.5 Conversion of Weight Unit

- Pressing CONVERSION „g %“ button, the unit is changed in order of g, m%, %, each time that you press the button.
- g : Current weight

- m% : Moisture percentage, the value that expresses the ratio as a percentage by dividing
- the evaporated mass by the first mass.
- % : Pure mass ratio, First mass (100%) – moisture percentage (–%) = Percentage value

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-110M
Weighing Range	0,001 ~ 110 g
Weighing Plate	Ø 90 mm
Read-Out [d]	0,01 mg
Reproducibility	0,1 mg
Permissible Temperature	5,0 ~ 35°C
Heat Source / Temp. Sensor	Halogen Lamp / PT100 Sensor
Temp. Range / Solution	40 ~ 199°C / 1°C
Moisture Range / Readability	0,00 ~ 100% / 0,01%
Dry Residual	Range: 0,00 ~ 100% Read ability: 0,01%
ATRO	100~999%, 0~999%
Timer / Auto-stop	1~99 min (Resolution: 1 Sec.) Auto-stop 0,1~9,9% within 1 min
Number of Storage	15
Calibration	External Calibration Included 100 g Calibration Weight
Display	Digital LCD with Back - Light Function
Dimension (W x D x H) & Net Weight	180 x 200 x 380 mm / 5,8 kg
Power Consumption	400 W
Power Consumption	AC 220V, 50/60Hz

Notizen / Notes:



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