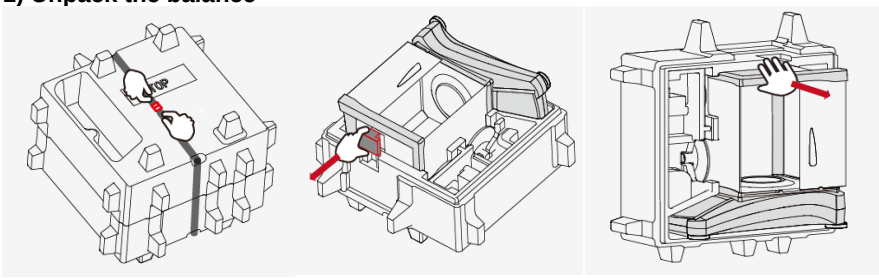
Adventurer™ Balances
User Guide

Update history

Item	Date	Version	Updated content
1	2023.4.26	F	Update 7.Technical Data
2	2023.6.13	L	Update version
3.	2023.11.2	M	Updated product specifications
4.	2024.8.13	N	Update the applicable models for wind draft shield

1. ASSEMBLY

1) Unpack the balance



1) Remove the binder 2) Take out the red cube 3) Take out the balance

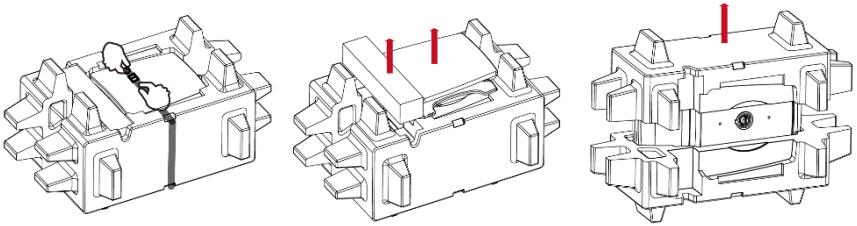
For 0.01mg, 0.1mg, and 1mg Models:

- Wind Ring (only for 0.01mg and 0.1mg models)

- Weighing pan (80mm) for 0.01mg model
- Weighing pan (90mm) for 0.1mg model

- Weighing pan (130mm) for 1mg model

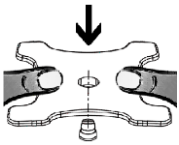
2) Install wind ring (when applicable) and weighing pan



1) Remove the binder 2) Take out the adaptor box and weighing pan 3) Take out the balance

For 0.1g and 0.01g Models:

− Weighing pan (175x195mm) for 0.1g and 0.01g balance



− Pan support, push the pan support to the end, tightly connect with cone.

2. SAFETY INFORMATION

This manual contains installation, operation and maintenance instructions for AX Series balance. Please read this manual completely before installation and operation.

Definition of Signal Warnings and Symbols

WARNING	For a hazardous situation with medium risk, possibly resulting in injuries or death if not avoided.
CAUTION	For a hazardous situation with low risk, resulting in damage to the device or the property or in loss of data, or injuries if not avoided.
Attention	For important information about the product.
Note	For useful information about the product.

Warning Symbols


General hazard


Explosion hazard


Electrical Shock Hazard

Safety Precautions

CAUTION: Read all safety warnings before installing, making connections, or servicing this equipment. Failure to comply with these warnings could result in personal injury and/or property damage. Retain all instructions for future reference.

- Before connecting power, verify that the AC adapter's input voltage range and plug type are compatible with the local AC mains power supply.
- Do not position the equipment such that it is difficult to reach the power connection.
- Make sure that the power cord does not pose a potential obstacle or tripping hazard.
- Operate the equipment only under ambient conditions specified in these instructions.

- This equipment is for indoor use only.
- Do not operate the equipment in wet, hazardous or unstable environments.
- Do not allow liguids to enter the equipment.
- Do not load the equipment above it's rated capacity.
- Do not drop loads on the platform.
- Do not place the equipment upside down on the platform.
- Use only approved accessories and peripherals.
- Disconnect the equipment from the power supply when cleaning.
- Service should only be performed by authorized personnel.

WARNING: Electrical shock hazards exist within the housing. The housing should only be opened by authorized and qualified personnel. Remove all power connections to the unit before opening.

WARNING: Never work in an environment subject to explosion hazards! The housing of the instrument is not gas tight. (Explosion hazard due to spark formation, corrosion caused by the ingress of gases).

Intended Use

This instrument is intended for use in laboratories, pharmacies, schools, businesses and light industry. It must only be used for measuring the parameters described in these operating instructions. Any other type of use and operation beyond the limits of technical specifications, without written consent from OHAUS, is considered as not intended.

This instrument complies with current industry standards and the recognized safety regulations; however, it can constitute a hazard in use.

If the instrument is not used according to these operating instructions, the intended protection provided by the instrument may be impaired.

3. INSTALLATION

3.1 Selecting the location

The location must be sturdy, flat and level. Avoid locations with excessive air current, vibrations, heat sources or rapid temperature changes. Allow sufficient space around the instrument.




3.2 Connecting Power

Connect the AC adapter power cord to the instrument's power input connector, and then connect the AC plug to a suitable electrical outlet.

Attention: Only use an AC adapter specified by OHAUS.

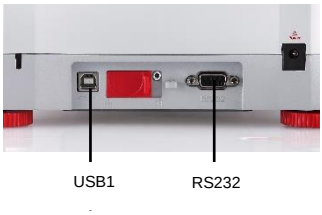
Attention: For optimal weighing performance, allow the balance to warm up for 60 minutes prior to use.

3.3 Connecting the Interface

Use the built-in RS-232 Port to connect either to a computer or a printer with a standard (straight-through) serial cable.

Or connect using the scale's USB port.

Interface connections on the rear of the balance:
USB connection on the front of the balance:



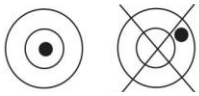
USB1: Used to connect to PC only

USB2: Used to connect a USB flash driver only

RS232: Used to connect to PC or Printer

3.4 Leveling the Equipment

To level the instrument, adjust the feet/leveling wheel so the bubble is centered in the circle of the level indicator. Be sure the equipment is level each time its location is changed.



3.5 Initial Calibration

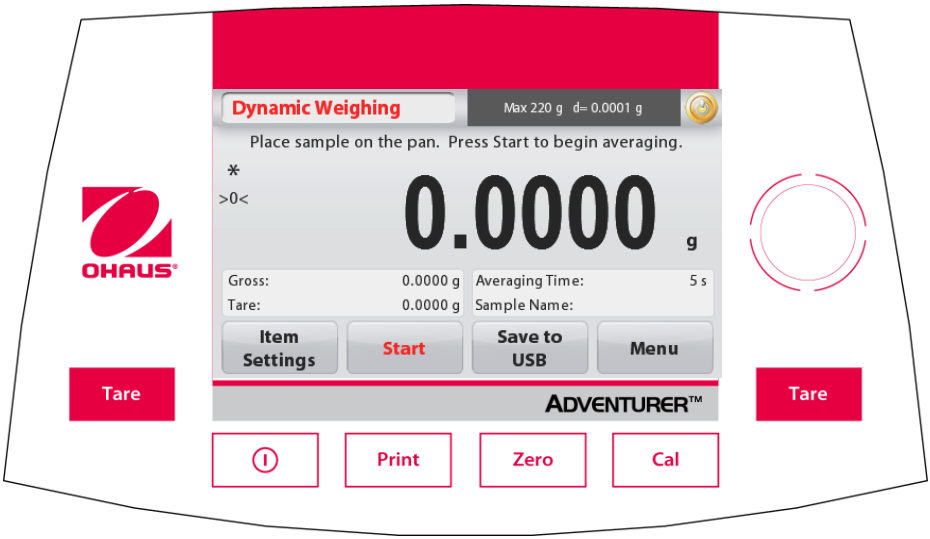
For best results, the instrument's calibration should be checked prior to first use. If adjustment is needed, refer to the Calibration section of the instruction manual.

4. OPERATION

4.1 Overview of Display, Home Screen

This equipment utilizes a touch-sensitive display. *Touch* areas and Buttons to control the equipment's functions.

CONTROLS



Button	Action
	User logout button
	Short Press (if powered Off): Turns on the scale Long Press (if powered On): Turns off the scale **Note:** The balance will automatically power on when power is connected.
	Short Press: Prints the present data to a printer or a computer.
	Short Press: Perform Zero operation
	Short Press: Perform Tare operation
	Short Press: Perform Tare operation

Main Application Screen

Application Instructional Messages

Stability (*), Net (NET), Gross (G) and/or center of zero (>0<) indicators

Reference Fields

User logout button

Result Field: Information varies by application

Touch **g** to change unit

Application Buttons:

Functions vary by application

Menu & Screen Navigation

Touch **Menu** to open the menu list.

Calibration:
Touch to view calibration options.

Balance Setup:
Touch to view and change balance settings.

Weighing Units:
Touch to view and change weighing units.

Data Maintenance:
Touch to view data maintenance settings.

Communication:
Touch to view COM Device Settings and Print Settings.

GLP and GMP Data:
Insert user data for traceability.

Factory Reset:
Touch to do a Factory reset of menu settings.

User Mangement:
Touch to enter the submenus: **User Profiles** (Edit the user), **Change Password** and **Auto Standby**

4.2 Using the Balance

Note: Before using any application, be sure the balance has been leveled and calibrated.

Weighing Application

1. If required, place an empty container on the pan and press **Tare**.
2. Add sample to the pan or container. The display shows the weight of the sample.

5. MAINTENANCE

5.1 Cleaning

WARNING: Electric Shock Hazard. Disconnect the equipment from the power supply before cleaning.
Make sure that no liquid enters the interior of the instrument.

Attention: Do not use solvents, harsh chemicals, ammonia or abrasive cleaning agents.

The housing may be cleaned with a damp cloth and mild detergent if necessary.

5.2 Service Information

For troubleshooting common problems, download the user manual from www.Ohaus.com. If the issue persists, please visit our website for available support and service centers at https://www.ohaus.com/en-us/support/service-centers.

6. LEGAL for TRADE

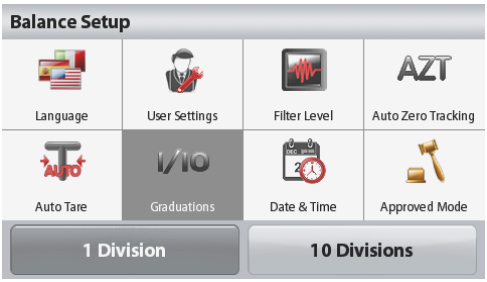
MEASUREMENT CANADA AND NTEP CERTIFIED BALANCES
LEGAL FOR TRADE SETTING AND SEALING

When the balance is used in trade or a legally controlled application, it must be set up, verified and sealed in accordance with local weights and measures regulations. It is the responsibility of the purchaser to ensure that all pertinent legal requirements are met. As the requirements vary by jurisdiction, the purchaser is advised to contact their local weights and measures office for instructions about putting the balance into service.

6.1 Settings

Place the balance in the location of use, level the balance and perform the following steps:

1. For models with selectable graduation size, set the desired value in the Graduations menu.
   a) Press **Menu** on the main screen.
   b) Press **Balance Setup** on the Main Menu screen.
   c) Press **Graduations** on the Balance Setup screen.
   d) Press the desired graduation size.



e) Press **Back** to return to the previous menu or **Exit** to return to the Main screen.

Attention: If the balance will be used for direct sales to the public, the larger graduation size must be selected.

2. Enter the Weighing Units menu and set the units of measure, making sure that they are permitted by the local weights and measures regulations.
   a) Press **Menu** on the main screen.
   b) Press **Weighing Units** on the Main Menu screen.
   c) Press the desired weighing unit on the Weighing Units screen, and the balance automatically return to the Main screen.

Attention:

- If the balance will be used for trade in Canada, pennyweights (dwt) must be set **Off**.
- Only metric units and U.S. customary units that have been set **On** will be available when the balance is set to Approved mode. All other units will be automatically set **Off**.

3. Enter the Calibration menu and perform a calibration.
   a) Press **Menu** on the main screen.
   b) Press **Calibration** on the Main Menu screen.
   c) If the balance is equipped with internal calibration, press **Internal Calibration** on the Calibration screen. Then press **Calibration** to initiate the internal calibration process.
   d) If the balance is not equipped with internal calibration, press **Span Calibration**. Then follow the prompts on the screen to complete the calibration. Be sure to have the necessary calibration weights on hand.
   e) When the calibration has been completed, the balance will return to the Main screen.

4. Enter the Calibration menu and set the Internal Calibration and Automatic Calibration settings, making sure that they meet the local weights and measures regulations.
   a) Press **Menu** on the main screen.
   b) Press **Calibration** on the Main Menu screen.
   c) Press **Internal Calibration** on the Calibration screen.
   d) Press **On** or **Off** to select the Internal Calibration setting.

   Attention: Internal Calibration must be set **Off** when the balance is used for trade in Canada.

e) Press **Automatic Calibration** to select **On** or **Off**.
Attention: Automatic Calibration must be set **Off** when the balance is used for trade in Canada.
f) Press **Back** to return to the previous menu or **Exit** to return to the Main screen.

5. Set the position of the security switch located at the back of the balance to the locked position.

6. Enter the Balance Setup menu and set the Approved Mode setting to **On**.
   a) Press **Menu** on the main screen.
   b) Press **Balance Setup** on the Main Menu screen.
   c) Press **Approved Mode**, and then press **On**.
   d) Press **Back** to return to the previous menu or **Exit** to return to the Main screen.

6.2 Verification
A weights and measures official must perform the verification procedure. Contact the local weights and measures office for more information.

6.3 Sealing
After the balance has been verified, the weights and measures official or authorized agent will install an official seal to prevent undetected access to the legally controlled settings. Before sealing the device, ensure that the security switch is in the locked position and the Approved Mode setting in the Balance Setup menu has been set to **On**.
If using a wire seal, pass the sealing wire through the holes in the security switch and Bottom Housing as shown.

If using a paper seal, place the seal over the security switch and Bottom Housing as shown.

Un-Locked

Locked with Wire Seal

Locked with Paper Seal

7. TECHNICAL DATA

Equipment ratings:

- Indoor use only
- Altitude: Up to 2000 m
- Operating temperature range: 5˚C to 40˚C
- Specified temperature range: 10˚C to 30˚C
- Humidity: maximum relative humidity 80 % for temperatures up to 31˚C, decreasing linearly to 50% relative humidity at 40˚C
- Electrical supply: 12VDC, 0.84A. (For use with certified or approved) power source, which must have a limited-energy output.)
- Voltage fluctuations: Mains supply voltage fluctuations up to ±10% of the nominal voltage.
- Overvoltage category (Installation category): II
- Pollution degree: 2

InCal Model	**AX85**	**AX125D**	**AX225D**
Maximum Capacity (g) (Fine range/Full range)	82	82/120	102/220
Readability d, Fine Range (mg)	0.01	0.01	0.01
Readability d, Full Range (mg)	0.01	0.1	0.1
Repeatability (sd.) , ≤5% of Full Load (mg)	0.01		
Repeatability (sd.), 5% of Full Load to Fine Range Max (mg)	0.02		
Repeatability (sd.), Fine Range Max to Full Range	0.02	0.1	0.1
Linearity Deviation, Typical (mg)	±0.06		
Linearity Deviation (mg)	±0.1		
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz		

Model	**AX124**	**AX124/E**	**AX224**	**AX224/E**	**AX324**
Capacity	120g	120g	220g	220g	320g
Readability d	0.0001g				
Repeatability (sd.), ≤5% of Full Load	0.00008g				
Repeatability (sd.), 5% of Full Load to Full Range	0.0001g				
Linearity Deviation, Typical	±0.00006g				
Linearity Deviation	±0.0002g				
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz AC Adapter Output: 12 VDC 0.84A				

Model	**AX223**	**AX223/E**	**AX423**	**AX423/E**	**AX523**	**AX523/E**	**AX623**	**AX623/E**
Capacity	220g	220g	420g	420g	520g	520g	620	620
Readability d	0.001g							
Repeatability (sd.), ≤5% of Full Load	0.0008g							
Repeatability (sd.), 5% of Full Load to Full Range	0.001g							
Linearity Deviation, Typical	±0.0006g							
Linearity Deviation	±0.002g							
Power supply	AC Adapter Input: 100-240 VAC 0.3 A 50-60 Hz AC Adapter Output: 12 VDC 0.84 A							

Model	AX422/E	AX622 AX622/E	AX822/E	AX1502 AX1502/E	AX2202 AX2202/E	AX4202 AX4202/E	AX5202	AX6202 AX6202/E
Capacity	420g	620g	820g	1520g	2200g	4200g	5200g	6200g
Readability d	0.01g							
Repeatability (sd.), ≤5% of Full Load	0.008g							
Repeatability (sd.), 5% of Full Load to Full Range	0.01g							
Linearity Deviation, Typical	±0.006g							
Linearity Deviation	±0.02g							
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz AC Adapter Output: 12 VDC 0.84A							

Model:	AX4201	AX4201/E	AX8201	AX8201/E	AX12001	AX12001/E
Capacity	4200g	4200g	8200g	8200g	12000g	12000g
Readability d	0.1g					
Repeatability (sd.), ≤5% of Full Load	0.08g					
Repeatability (sd.), 5% of Full Load to Full Range	0.1g					
Linearity Deviation, Typical	±0.06g					
Linearity Deviation	±0.2g					
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz AC Adapter Output: 12 VDC 0.84A					

Model	AX85M	AX125DM	AX225DM	AX124M	AX224M	AX324M	AX223M	AX423M	AX523M	AX623M
Max	82	82/120	102/ 220	120g	220g	320g	220g	420g	520g	620g
Min	0.001g	0.001g	0.001g	0.01g	0.01g	0.01g	0.02g	0.02g	0.02g	0.02g
d=	0.00001	0.00001/ 0.0001	0.00001/ 0.0001	0.0001g			0.001g			
e=	0.001g	0.001g	0.001g	0.001g			0.01g			
Approval Class	I	I	I	I			II			
Repeatability (sd.), ≤5% of Full Load	0.00001g			0.00008g			0.0008g			
Repeatability (sd.), 5% of Full Load to Fine Range Max	0.00002g			-			-			
Repeatability (sd.), Fine Range Max to Full Range	0.00002	0.0001	0.0001	0.0001g			0.001g			
Linearity Deviation, Typical	±0.00006g			±0.00006g			±0.0006g			
Linearity Deviation	±0.0001g			±0.0002g			±0.002g			
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz AC Adapter Output: 12 VDC 0.84A									

MODEL	AX1502M	AX2202M	AX4202M	AX5202M	AX6202M	AX8201M	AX12001M
Max	1520g	2200g	4200g	5200g	6200g	8200g	12000g
Min	0.5g	0.5g	0.5g	0.5g	0.5g	5g	5g
d=	0.01g					0.1g	
e=	0.1g					1g	
Approval Class	II						
Repeatability (sd.), ≤5% of Full Load (g)	0.008g					0.08g	
Repeatability (sd.), 5% of Full Load to Full Range (g)	0.01g					0.1g	
Linearity Deviation, Typical (g)	±0.006g					±0.06g	
Linearity Deviation (g)	±0.02g					±0.2g	
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz AC Adapter Output: 12 VDC 0.84A						

Model	AX224N	AX223N/E	AX423N AX423N/E	AX523N/E	AX623N/E
Max	220g	220g	420g	520g	620g
Min	0.01g	0.02g	0.02g	0.02g	0.02g
d=	0.0001g or 0.001g	0.001gor 0.01g			
e=	0.001g	0.01g			
Approval Class	I	II			
Repeatability (sd.), ≤5% of Full Load	0.00008g	0.0008g			
Repeatability (sd.), 5% of Full Load to Full Range	0.0001g	0.001g			
Linearity Deviation, Typical	±0.00006g	±0.0006g			
Linearity Deviation	±0.0002g	±0.002g			
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz AC Adapter Output: 12 VDC 0.84A				

Model	AX622N/E	AX1502N/E	AX2202N/E	AX4202N/E	AX4202N/GEN	AX5202N/GEN	AX6202N/E	AX8201N/E	AX120001N/E
Max	620g	1520g	2200g	4200g	4200g	5200g	6200g	8200g	12000g
Min	0.5g	0.5g	0.5g	0.5g	0.5g	0.5g	0.5g	5g	5g
d=	0.01g or 0.1g							0.1g or 1g	
e=	0.1g							1g	
Approval Class	II								
Repeatability (sd.), ≤5% of Full Load	0.008g							0.08g	
Repeatability (sd.), 5% of Full Load to Full Range	0.01g							0.1g	
Linearity Deviation, Typical	±0.006g							±0.06g	
Linearity Deviation	±0.02g							±0.2g	
Power supply	AC Adapter Input: 100-240 VAC 0.3A 50-60 Hz AC Adapter Output: 12 VDC 0.84A								