

ABL

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ELECTRONIC PRECISION BALANCES

Series: ABL

ATTENTION:



This is a guide to start working quickly and does NOT substitute the complete user manual; please read the user manual for a correct installation and use of your new electronic balance.

Failure to use the balance in accordance with the advice in the user manual could mean that the product gives in-correct readings.

1 Positioning the instrument

1.1 Preface

Balances with resolutions of 0.1mg and 0.01mg are instruments of high sensitivity and precision. To achieve reliable and accurate results it is fundamental to install the instrument in a suitable environment to meet the requirements necessary to ensure its proper function.

1.2 Recommendation for installation of the instrument

Choosing of the correct placement of the instrument is fundamental to ensure optimal and precise operation.

For optimum weighing it is necessary to respect the following criteria:

TYPE OF ENVIRONMENT

- Place the balance in a corner of the room to minimize vibrations.
- Place the balance in a secluded location: not near doors, to prevent air drafts.
- Avoid places with many people: each person who is close generates a draft of air.
- Protect the balance from air conditioning or ventilation fans and other electronic devices with fans (e.g. Computer or other laboratory instruments).
- Keep the room temperature as constant as possible, at a value between 15 and 30 ° C.
- Keep the humidity where balance is used as constant as possible, it should be between 40% RH and 65% RH of moisture.
- Place the balance away from heat sources, e.g. heaters, light bulbs (use tubular lamps), windows (the warmth of the sun's rays can filter out the window and may affect the weighing result).

TABLE TYPE

- The table must be stable: must not sag during placement of the instrument (e.g. Laboratory bench or marble / granite counter top).
- Must be as anti-magnetic and anti-static as possible.
- Must be reserved to the balance.
- Place the balance as close as possible to the table legs because there are less vibrations rather than in the middle of the table.
- The best table to use is the Adam Anti – Vibration Table, details of which can be provided by your supplier.

2 Recommendations for the correct use of the instrument

2.1 Preface

In order to obtain accurate and repeatable weighing pay attention to the following.

2.2 First power on

- THE FIRST TIME THAT YOU CONNECT THE BALANCE TO THE MAINS, BEFORE USE, WAIT AT LEAST 12 HOURS TO ENSURE THE WARM-UP OF THE INSTRUMENT.
- For a correct use of the instrument never disconnect the balance from the mains. If you want to turn it off, use the ON / OFF button to put it in Stand-by (this way it is not necessary to wait each time the warm up time).

2.3 Using the Balance

- Level the balance. It is fundamental always to level the instrument: regularly check that the spirit bubble is at the center of the level. Adjust and lock the feet to always ensure the correct leveling of the balance.
- Always load the sample to weigh in the center of the plate to avoid possible errors.
- Open the glass doors of the cabinet as little as possible and use tweezers to load/unload the samples to be weighed, to avoid contamination of the sample.
- Pay attention to possible Static charges that may be generated due to containers with materials of low electrical conductivity or due to dry air with less than 40% moisture. Electrostatic charges can alter the results of the weighings. It is recommended to use the Adam Ioniser ABI-1 to eliminate static charges present on any substances to be weighed or that have accumulated on the instrument

Because of static charges the results of weighings are always different and the balance is not repeatable.

- Pay attention to **dynamic push**: a big **temperature** difference between the sample to be weighed and the weighing chamber creates air drafts along the sample. A colder object appears heavier while a warmer object lighter, this effect is reduced when it is reached the thermal equilibrium between sample and weighing chamber.

With dynamic push you will get results that move in one direction depending on whether the material is colder or warmer.

- Pay attention to substances that can evaporate (alcohol) or absorb humidity (silicon gel); because with these types of materials weight may vary constantly in one direction.
- Be careful to magnetic materials: magnetic objects will attract each other, the force that results are wrongly interpreted as a load.

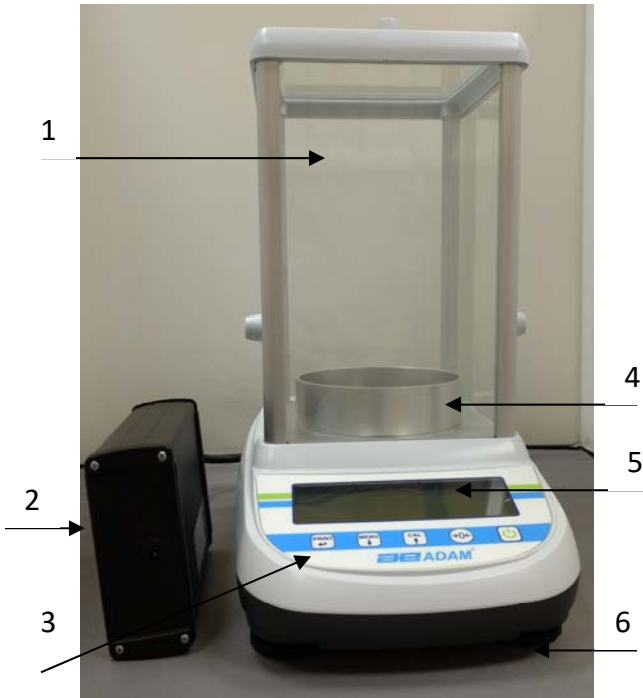
With magnetic materials the weighing results are hardly repeatable, the indication remains stable but weighing result provides different results.

2.4 Care and cleaning of the balance

- Before **cleaning**, remove all removable parts (e.g. Plate, underplate).
- To clean the weighing chamber, the plate, the glasses and the other parts please use an **antistatic** liquid (do not use cloths that can leave fragments).

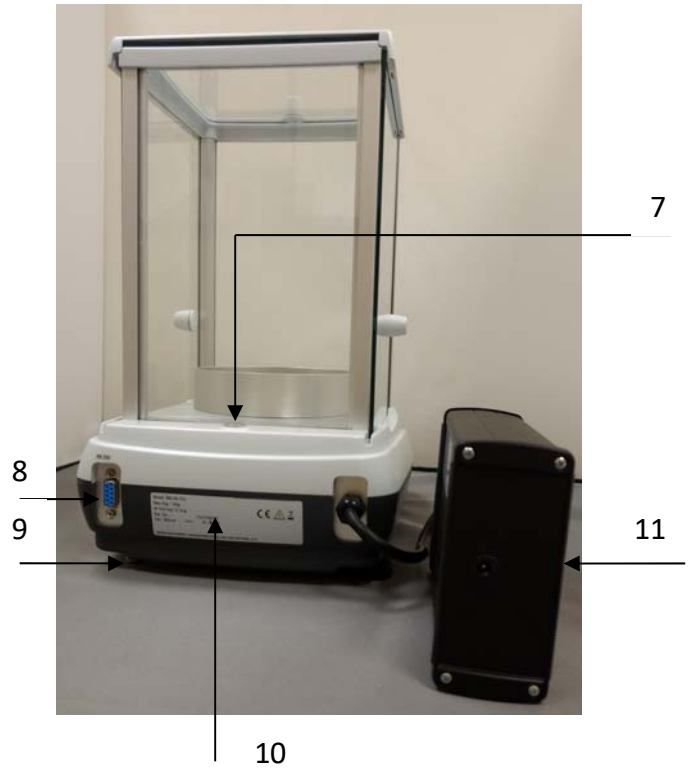
3 Balance Overview

3.1 VIEW OF THE FRONT BALANCE



- 1 Draft windshield
- 2 Electronics box
- 3 Keyboard
- 4 Antiventilation ring
- 5 Display LCD
- 6 Adjustable front foot

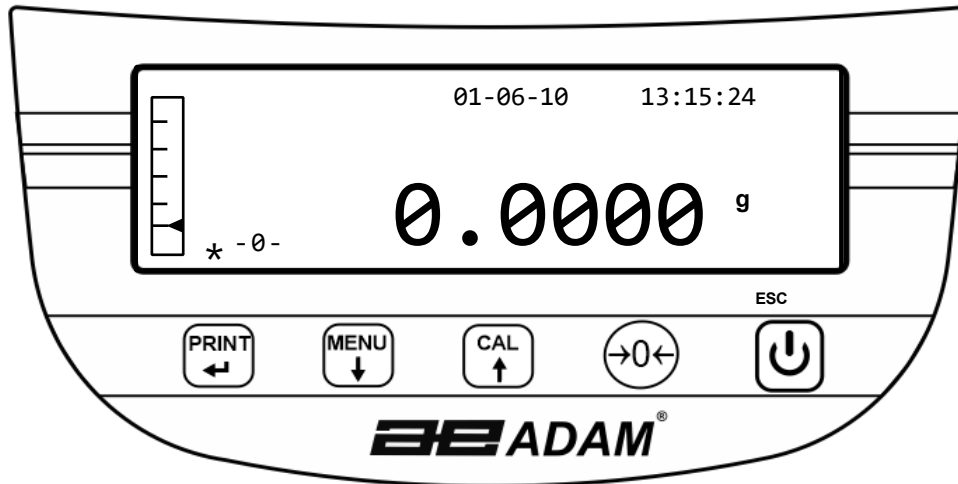
3.2 VIEW OF THE REAR BALANCE



- 7 Spirit level
- 8 Connector 9 pin female interface RS232 for printer /PC
- 9 Rear fixed foot
- 10 Label with balance model and serial number
- 11 Power socket

4 Keyboard and display

5.0 KEYBOARD AND DISPLAY



Selection CONFIRM or SEND data to the printer button



Button for accessing the MENU to set the balance's parameters



Balance CALIBRATION button



TARE and zeroing button




Standby (OFF) or operating (ON) button or ESC

***** Stability indicator

O Zero indicator

% Percent weight

PC Piece counting

 Battery indicator

▼ Data insertion mode

H Upper threshold

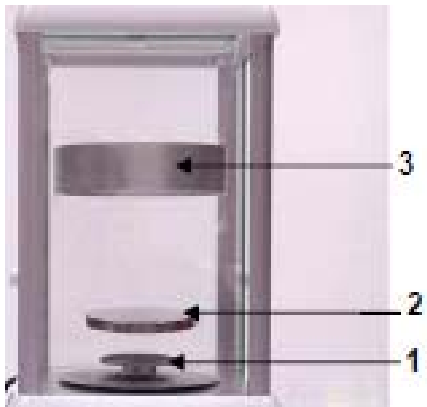
L Lower threshold

DS Density measurement

ct, Unit of measurement

5 Operating

5.1 Components location

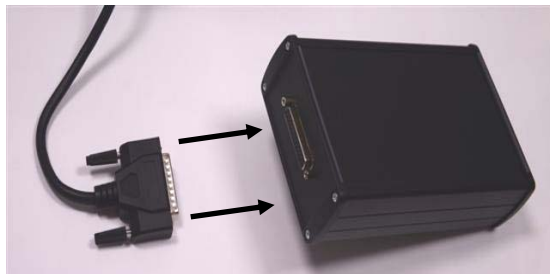


Note: Scales with capacity 0.01mg on the pan Support and the Weighing Pan is in one piece



1. Place Pan Support on balance cone taking care to locate correctly.
2. Fit Weighing Pan on pan support and check the pan is located correctly.
3. Fit Anti-ventilation ring ensuring it clears the pan edges.

5.2 Connection balance and electronic box



- Insert plug connection cable into jack of electronic box
- Fix the connector securely by screwing the two side screws

5.3 Connection between power supply and electronics box



- Insert power supply connector in DC plug placed on electronics box
- Use only power supply provided with the balance

5.4 Balance levelling

- **Level** the balance with the spirit level, adjusting it (2) until the air bubble is placed at the centre of the indicator.



- **Adjust** the balance according to the level bubble:

Lift the balance → rotate front feet clockwise

Lower the balance → rotate feet anticlockwise

- Once level bubble is properly placed using adjusting feet (2), lock them screwing the disk Foot-locking (3.)



6 Switch on

After connecting the balance to power supply, a self-diagnosis of electronic circuits is automatically carried out, ending with stand by indication.



Balance Warm-up: Wait 12 hours from switch on for warm up

It is recommended to never disconnect the balance from the power socket and use the ON/OFF key to put the instrument in standby mode when you finish using it.

From the "STAND BY" mode: to bring the balance back to working conditions, press ON/OFF key.



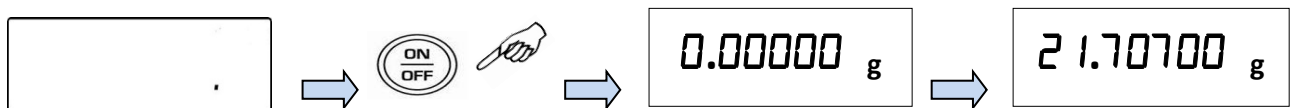
It is recommended not to drop heavy objects on balance pan, to avoid damage of the instrument.

In order to get precise measurements, balance has to be adjusted to the environmental conditions. This adjustment is accomplished through calibration function.

You must calibrate the balance every time it is moved to different place.

7 WEIGHING

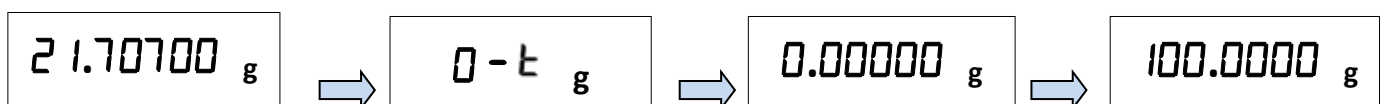
In "STAND BY" mode press the ON/OFF button. Place sample to be weighed on the pan, wait for the stability symbol ✖ (asterisk) to appear and then read the weight value.



Press again ON/OFF button to return to "STAND BY" mode.

8 TARING

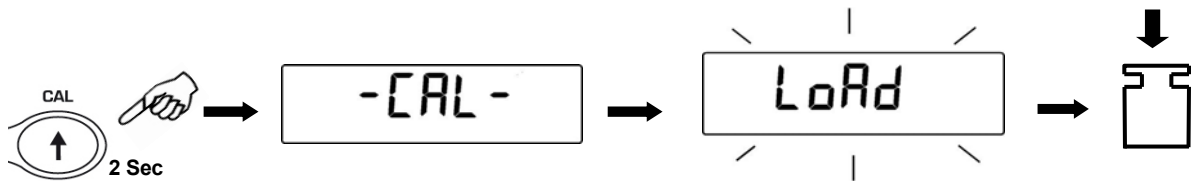
Place the container on the pan and press O/T button. "O-t" is displayed. As soon as the stability is reached the value of zero "0.00000" will be displayed (weight of container is internally stored). Place the sample to be weighed in the container, the net weight will now be displayed.



9 EXTERNAL CALIBRATION and LOAD FUNCTION

The balance has a **LOAD** meaning, it is also possible to effect calibration using a weight with a value greater than the factory setting value:

1 Press and hold the **CAL** button with pan unloaded until the acoustic buzzer stops, then release the button. The display will show CAL message followed by flashing **LOAD** message.



2 While the **LOAD** message is flashing, load a weight on the pan with value equal or greater to the factory setting calibration weight value; the balance recognizes as valid a weight equal or greater to factory setting calibration weight IF its value is an integer value considering the most significant digit. *For example:* if factory setting value of calibration weight is 200g, then it is possible to calibrate the balance also with weights which value starts from 200g, 300g, 400g up to the upper limit of the balance weighing range.

3 Once the calibration is successful, the display stops flashing and the value of the calibrated weight is shown with the current measuring unit. Remove the calibration weight used from the pan of the balance. The balance is ready for weighing.

0.00000 g



NOTE: if there is any interference during calibration process, an error message will be shown.

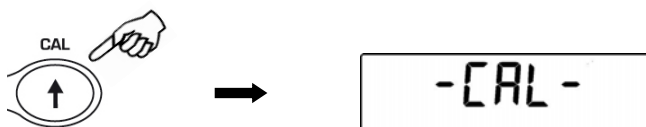
10 INTERNAL CALIBRATION

10.1 Autocalibration (AUT-CAL)

The balance makes an auto-calibration when the temperature variation exceeds the factory value and/or at factory set time intervals. The autocalibration is performed through the internal mass and only when the weighing plate is unloaded and only when no other weighing operations are being performed.

In this mode it is also possible to perform a calibration with the internal mass by pressing the **CAL**-key manually at any time, being sure that weighing plate is unloaded.

1 Press the **CAL** button when the weighing plate is unloaded. You will see the message “**CAL**” displayed and then the balance calibration will be automatically performed



2 At the end of the calibration the balance returns to standard weighing mode.



IF, due to vibrations or strong air-flows, the calibration is not successful, the message “**CAL but**” is displayed. Press the **CAL** button again to retry.

If the problem does not disappear, select the “external calibration” mode and contact the service center.

11 OVERVIEW OF BALANCE PARAMETERS MENU

| SEQUENCE | 1 | 2 | 3 | 4 | 5 |
|----------|---|---------------------------------------|-------------------------------|-----------------------------------|--|
| ACTION | MENU BUTTON LONG PRESS | MENU BUTTON SHORT PRESS | CAL BUTTON | ENTER BUTTON | MENU BUTTON LONG PRESS |
| RESULT | You enter into the balance parameters menu | Scroll backward in the menu | Scroll forward in the menu | Confirm the choice selected | You exit from the balance parameters set menu |

| <i>Parameters</i> | <i>Description</i> |
|-------------------|--------------------------------------|
| UNITS | select measuring units |
| PC-PRINT | select print mode |
| BAUD RT | set velocity of serial communication |
| AUTO 0 | auto-zero setting |
| FILTER | filters level |
| STABIL | stability level |
| BLT | backlight mode |
| TIME OFF | auto switch off |
| CONTR | display contrast |
| CALIB | calibration mode |

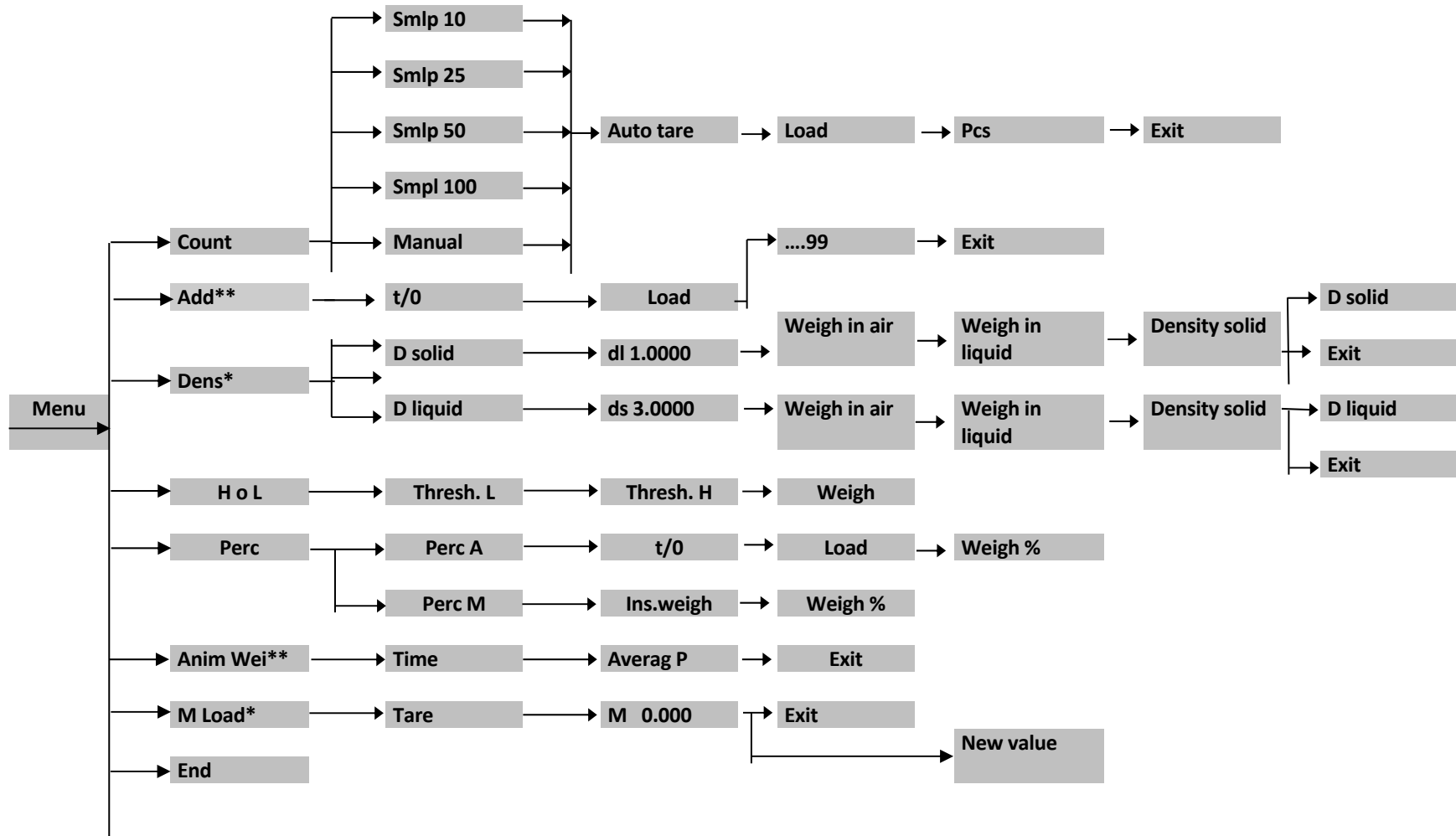
The diagram shows a list of parameters and their descriptions. A vertical arrow on the left points downwards, indicating scrolling down. A vertical arrow on the right points upwards, indicating scrolling up. A horizontal arrow at the bottom points to the right, indicating scrolling right. A small square icon is located at the bottom center of the diagram.

For a complete description of functions, it is warmly suggested to read the user manual of the balance.

12 OVERVIEW OF BALANCE PROGRAMS MENU

Press the **MENU** button. Press the **MENU** button again to scroll forward to next parameter or press **CAL** button to return to previous parameter; press **PRINT** button to confirm the choice. To exit the menu, press and hold the **MENU** button until the acoustic buzzer ends.

For a complete description of balance programs, it is recommended to read the user manual.



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- High Capacity Balances
- Moisture analysers / balances
- Mechanical Scales
- Counting Scales
- Digital Weighing/Check-weighing Scales
- High performance Platform Scales
- Crane scales
- Mechanical and Digital Electronic Health and Fitness Scales
- Retail Scales for Price computing

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