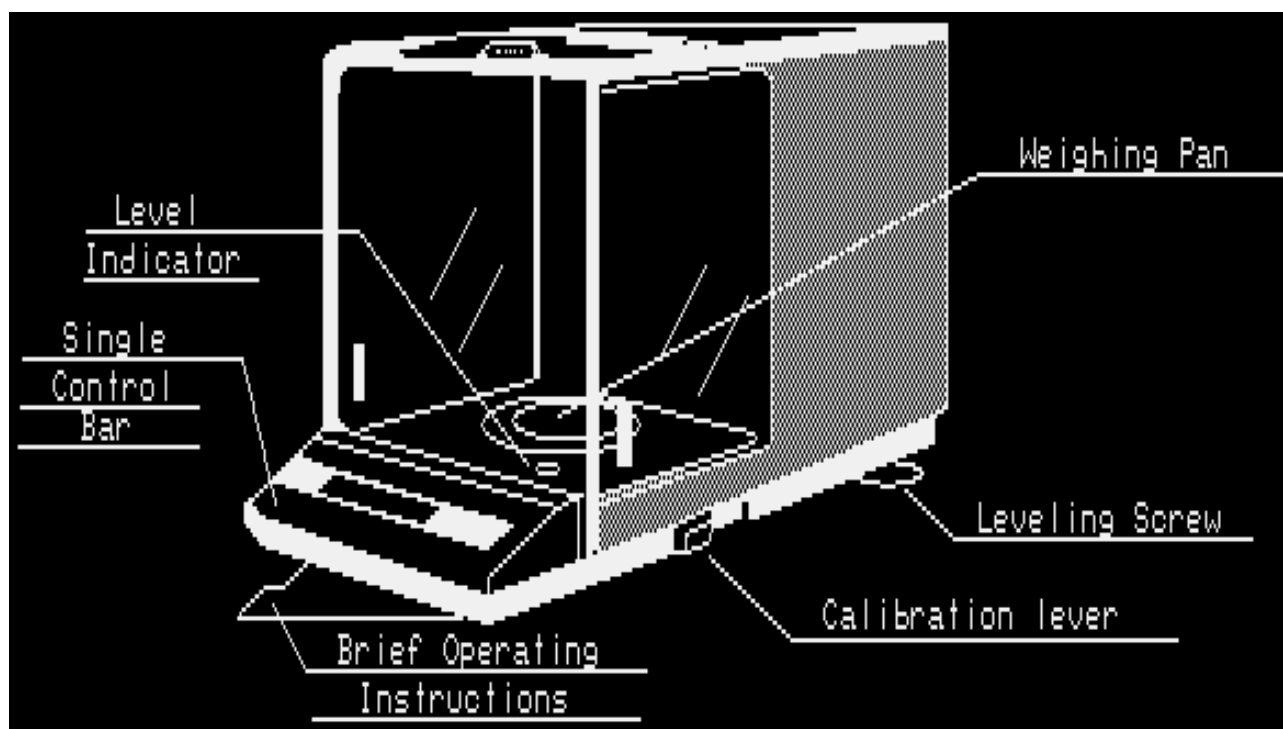


FULL OPERATING INSTRUCTIONS FOR MODELS AE 50/100 and/or AE 160/200

The single pan electronic balance works off of the theory of a double pan mechanical balance, but is a much faster and unencumbered process. The procedure, basically, consists of establishing a calibrated zero point, placing an object on the pan, and reading the mass presented on the digital display.

First, you will be familiarized with the balance controls. Discussion of the calibration and measuring cycle will then be explained. Finally, the actual massing process will be determined.



START-UP

First, inspect the balance for scattered chemicals on or nearby the balance. Use the small artist's brush to clean the pan and inside the balance chamber. Do not blow air through the chamber!

If chemical is underneath the pan, you may remove the pan by lifting it, in a vertical fashion, off of its pedestal. Clean the chamber with the artist's brush and then replace the pan upon the pedestal.

Check the bubble inside the chamber to see if the balance is level. If not, adjust the leveling screw(s) until adequate. At this point, all balance doors should be closed.

Lightly press the control bar DOWN and then release. You will feel a faint 'click' when this function is performed properly. Immediately the digital mass display will show the following for a few seconds.



This display will then be automatically followed by:



and finally,



will automatically be displayed.

This cycle will normally take place when turning on the balance. If 0.0000 is not displayed or is slow in its appearance on the digital mass display, vibrations and/or air currents have prevented a stable zero point. Elimination of these factors will immediately allow the balance to zero.

If a power interruption occurs while the balance is operating, the OFF-1 message appears on the digital mass display. If this occurs, simply press the control bar down and then release to resume normal operations.

The balance may be turned off at any time by simply pressing the control bar UP until a 'click' is felt and/or heard. The digital mass display will then go dark.

CALIBRATION OF BALANCE

For proper calibration, the balance must be left connected to its power supply for at least 60 minutes! Press and hold the control bar down until the letters CAL appear in the display, then release the control bar.

i.e.



The display will then change to CAL - - - - at the moment the control bar is released.

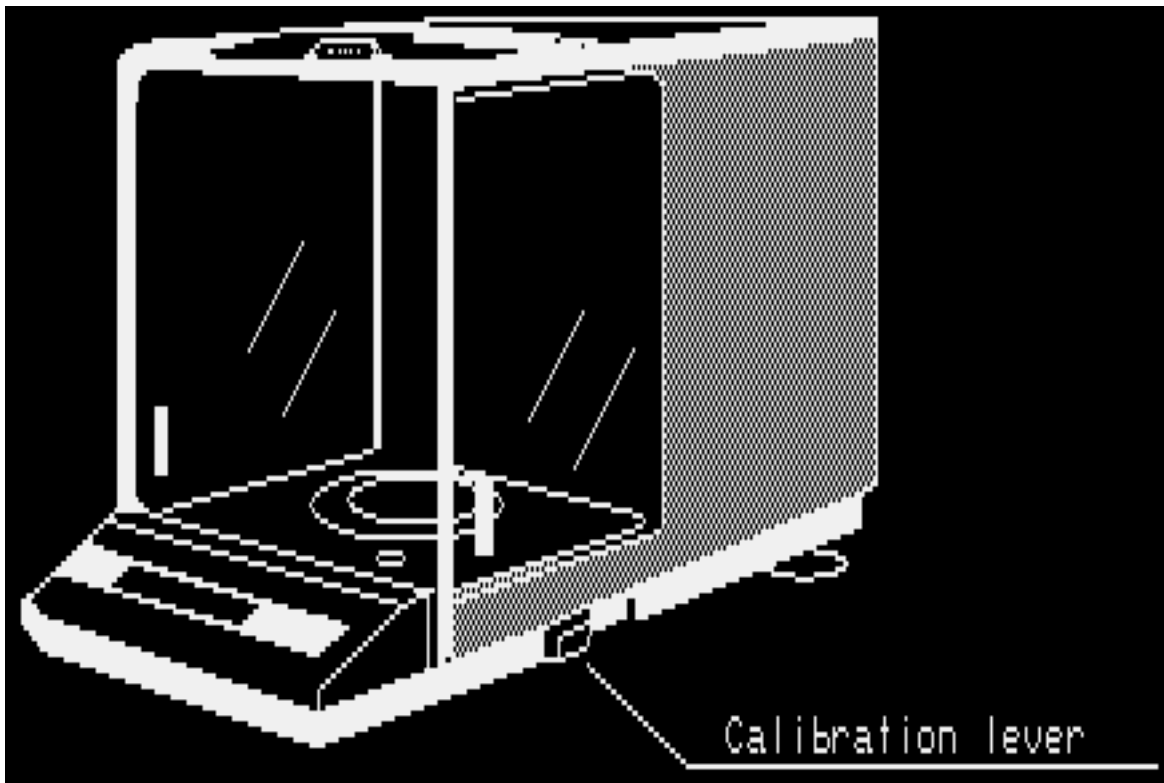
i.e.



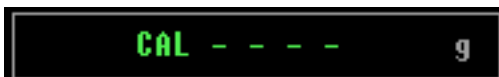
The display will then show CAL 100 (Models AE 160/200) or CAL 50 (Models AE 50/100) while blinking.

i.e.





Once having moved the calibration lever to the rear, the display will change to:



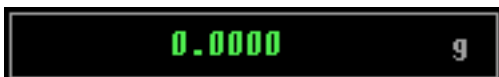
...followed by 100.0000 (AE 160/200) or 50.0000 (AE 50/100). After a few moments, the display will show:



At this point return the calibration lever fully toward the front of the balance. The display will then change from:



to



The calibration mode has now been completed.

Everytime the balance is switched on, a calibration function should be performed following the START-UP procedure. Once calibrated, and with the balance remaining on, no further calibrations are necessary.

SELECTING THE PROPER BALANCE INTEGRATION AND STABILITY

This selection is usually made relative to the degree of accuracy desired versus the massing environment that the balance is exposed. You must decide which settings are correct for your situation.

Possible selections for integration times are:



-1- Used for a very stable, vibration-free massing table or foundation (a short measuring cycle)



-2- Normal setting



-3- Used for unfavorable ambient conditions (a long measuring cycle).

To make your selection, simply press and hold the control bar down until the letters -Int- appear in the display.

Release the control bar.

Immediately, press the control bar down and release (click the control bar) until one of the previously discussed, selections is made.

At this point, stop and wait for the display to return to the massing mode (i.e., 0.0000). Once the display has returned to the massing mode, the stability or balance sensitivity may be selected.

Possible stability selections are:



-1- Great sensitivity (a long pause before data are released)



-2- Less sensitivity (a short pause before the data are released)-Normal setting.



-off- The stability detector is switched off (digital display may fluctuate).

To make your selection, simply press and hold the control bar down until the letters -ASd- appear in the display.

Release the control bar.

Immediately, press the control bar down and release (click the control bar) until one of the, previously discussed, selections is made.

At this point, stop and wait for the display to return to the massing mode (i.e., 0.0000). If selections 1 or 2 (from above) are made, the digital display may only be read (i.e., while

massing or taring) after the stability detector lamp goes out. If selection 3 (ASd off) is made, the digital display can be read at any time. The stability detector lamp will remain off at all times while in this mode. Since this is the case, fluctuations in the mass readings are normal and the operator must decide which mass readings to accept.

TARING/MASSING

When massing chemical reagents that require a container, it is faster and much more convenient to zero the balance with the container on the balance pan. In this way, the digital mass displayed will reflect only the mass of the chemical.

To tare out the container's mass, simply place the container on the pan.

Close all balance doors.

Press the control bar down once and release.

The digital mass display will then read 0.0000.

At this point, whatever is placed inside the container will be massed directly.

To obtain the mass of a reagent, simply open the balance door(s), add the required amount of chemical to the container and then close the balance door(s).

Wait for the stability detector lamp to go dark and then read the digital mass display.

If the stability detector was switched off, then the display may be read at anytime.

i.e.



stability detector

CARE AND MAINTENANCE

The balance pan and housing may be cleaned with a soft cloth containing soapy water.

DO NOT USE ANY STRONG SOLVENTS!

The small artist's brush may be used to remove residues from the massing chamber.

REPLACING THE MICROFUSE

If a microfuse becomes defective (indicated by a total power loss to the balance), then proceed as follows.

1. Disconnect the power cable.
2. Locate the fuse holder (directly above the 3-prong power socket).
3. With a small screwdriver and from the bottom of the fuse holder, pry the fuse holder out by turning the tool in the bottom notch.
4. Replace with the proper fuse(s).
5. Replace the fuse holder to the balance.
6. Plug the power cable in the balance.