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WEIGHING MACHINES AND CALIBRATION

This page concerns digital weighing machines only, not mechanical weighing machines.

This page does not concern approved scales – please see the next page.

For sake of simplicity I will refer to “weighing machines” (or “balances”) as “scales.”

Calibration is the matching of a unit of weight with the display on the balance, so that, for instance, 10g weighs 10g or 200g weighs 200g. If the scale goes out of calibration it will still give higher readings with higher weights, but the readings will not match the units, e.g. a 100g weight might weigh 105g. You can check this quite easily by weighing known weights.

Every scale will go out of calibration given enough time or if bumped or dropped. In the scientific industry scales have the calibration checked every year. That is why every scale in a laboratory or hospital has a sticky tab with the date it was last checked, a technician will call, he will check all the scales in the building, he will recalibrate any that are not accurate, he will charge just a few hundred pounds. However, if you have a low-value scale it is cheaper to recalibrate it yourself. Buy a weight and follow the instructions in the instruction leaflet.

D.I.Y CALIBRATION

Every now and again check the balance to see if it is reading correctly. If you don't have weights, use coins: 5p=3.25g, 1p=3.56g, 10p=6.5g, 2p=7.12g, 20p=5g, 50p=8g, £1=9.5g, £2=12g. For instance, one £2 coin + four £1 coins = 50g.

This is OK for balances that read down to 0.1g, but do not use coins for balances that read down to 0.01g, the coins will be too light due to wear. The recalibration instructions can be complicated, you must follow them precisely or you will make it worse. *IF IT IS READING CORRECTLY, LEAVE IT ALONE! IF THE BALANCE IS NEW IT WILL STILL BE FACTORY - CALIBRATED, LEAVE IT ALONE!*

How often you have to recalibrate a balance...depends. Very approximately, if you paid over £300.00, every year or two; if you paid under £300.00, at least once a year. Low-value balances are not so reliable: if you paid about £50.00, every few months; if you paid about £20.00, every few weeks; if you paid about £10.00 there really is no guarantee that it will stay in calibration from one day to the next, this is not a fault, you get what you pay for. You can, of course, *check* it (with known weights) as often as you like.

To recalibrate it yourself, you will need a weight, see the instruction manual to find out which, this is not included with the balance (prices, from £3.50 for a 50g, to £12.50 for a 2Kg). Keep the instruction leaflet in a safe place, it includes the calibration instructions, we do not have copies of the calibration instructions for discontinued models.

Alternatively, if it is under guarantee, send it back to us and we will recalibrate it for free. Obviously, if we can't recalibrate it we will replace it, since it is still under guarantee. If it is not under guarantee our charge for recalibration is £5.00 + return-postage (£4.50 up to 2Kg or £7.50 over 2Kg). It's usually cheaper to buy a calibration weight and do it yourself.

CALIBRATION OF APPROVED WEIGHING MACHINES

If your approved weighing machine (“scale”) isn’t giving correct readings, it might need recalibrating. “Approved” (for these scales) means approved by *Trading Standards* for buying precious metals by weight.

How do you know if your scales are ‘approved’? It’s approved if: you work at a branch of a large chains of stores; you bought it yourself and paid between £300.00 and £850.00; it has the approved marks (left picture); it has a lead seal to show if you have opened it (right picture).



You cannot recalibrate approved scales yourself, this feature (listed in the instruction manual) is disabled when the balance is calibrated by *Trading Standards* (‘approved’). You must send the scale back to us, the charge is £99.16 + VAT + postage [as of 2015], it takes about a week.

This is not to be confused with the machine being ‘broken’. If it is broken, it will need to be repaired, and once it is repaired it will need to be calibrated again.

Trading Standards charge for calibration quite independently of any “repair” and the fee is not refundable. If it fails, you have a choice. We can return it to you un-repaired (you don’t get the calibration fee back) or we can quote for a repair. Not only don’t you get the original calibration fee back, but the quote for the repair will include *another* calibration fee...because *Trading Standards* are going to charge again. I think this is grossly unfair, but that’s the way it works. The best I can do is to give you an idea of what might be wrong with the scales in the first place:

- It isn’t weighing accurately when you weigh an item at the top of its range (e.g. when you weigh a 200g weight on a machine that weighs up to 200g).
 - Providing the error is only slight, recalibration should fix it.
- It weighs perfectly but you haven’t had it checked for a long time.
 - There’s no harm in getting it recalibrated. In laboratories scales are recalibrated every year. Most shopkeepers wait until their scale is giving incorrect readings before getting it recalibrated. My advice is to check it regularly (by weighing known weights) and get it recalibrated the moment it gives an inaccurate reading. If you’re lucky, it will be fine for three or four years, if you’re unlucky it might need recalibrating after one or two years. Nothing remains perfect forever, it will eventually need recalibrating.
- It is dead, the display won’t light up.
 - Sounds like a power problem. Check the power supply (mains adaptor) to make sure it works, it should get warm in use. Check that you are using the correct power supply, not too weak (it won’t power the machine), not too powerful (you *will* burn out the electronics). If you return the machine to us, you must include the power supply that you have been using with it.
- The reading is erratic, it drifts (or jumps) up and down when nothing is being weighed.
 - There’s a high probability that the machine has been dropped or overloaded. e.g. if someone ‘bounces’ their hand on the weighing platform, just to see what happens, or if something *far* too heavy has been weighed, or if it’s been crushed in transit.¹ You have probably destroyed the strain gauge (the sensor at the heart of the machine) and it’s unlikely to be worth repairing.

¹ If you transport scales from one location to another (or if you post it back to us) carefully remove the weighing platform, wrap the scale in bubblewrap, pack it in a strong box not a padded bag,