

# SOP for Cleaning a Balance

## Benchtop Balances

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## Scope

This SOP describes the procedure for cleaning a laboratory (bench top) balance. It is designed to instruct laboratory personnel on how to proceed for thorough cleaning of a balance. The cleanliness of a balance can have a significant impact on operational efficiency and balance lifetime, as well as user safety.

## Cleaning Rules – Do's and Don'ts

- Make sure personnel are instructed on how to clean balances. Incorrect handling may cause damage to the weighing system or the electronics.
- First remove powder and dust, then sticky substances.
- For powder and dust use a tissue. Never blow; this could transport dirt or spilled sample materials inside the balance.
- For removal of sticky substances, use a damp lint-free cloth and mild solvent (Isopropanol or Ethanol 70%); avoid abrasive materials.
- Do not spray or pour liquids directly on the balance.
- Wipe away from cone opening (where the pan sits) or air ducts (gaps in front or at rear of the draft shield), when using cloth or brush.
- Remove parts for cleaning where possible (e.g. weighing pan, drip, tray). Only remove parts that can be removed without tools and whose removal is described in the operating instructions.
- If possible, do not disconnect peripheral devices unless cleaning is not possible without doing so.
- Clean the balance in its working location; do not tilt, move or carry it around if you are not instructed on how to carry a balance. Incorrect handling may cause expensive damage.

## Recommendations on Frequency of Cleaning

The frequency on cleaning varies, depending on industry, application and frequency of instrument use. As a general rule, METTLER TOLEDO recommends a balance should be cleaned immediately after every use or change of sample. When handling potentially toxic substances, the balance must always be cleaned after use.

## Cleaning Procedure

The following steps describe the general cleaning procedure, valid for all bench-top balances. Depending on the balance type and model owned, not all mentioned steps below are valid (e.g. a 0.1 g precision balance does not have a draft shield or a wind ring).

# Standard Cleaning Procedure

## 1. Get ready: Protect yourself and prepare instructions.

- a. Wear appropriate personnel protective equipment (coat, goggles and gloves).
- b. Consult the operating instructions on how to disassemble and reassemble the removable parts of your balance.
- c. Consult the operating instructions and/or user manual on which cleaning agents are recommended to clean the balance parts.

## 2. Switch off the balance display.

Unplugging the power is recommended but not necessary. If possible, leave the balance in its normal operating position, do not tilt it sideways and don't unplug connected peripherals.

## 3. Clean the area around the balance.

Use a tissue to remove any dirt surrounding the unit to avoid further contamination.

## 4. Disassemble all removable parts.

Depending on your balance model:

- a. Unlock and gently remove the draft shield panes;
- b. Remove the inner draft shield;
- c. Remove weighing pan, pan cover, pan support, wind ring and drip tray.

## 5. Clean the balance itself.

Use a lint-free cloth moistened with a mild cleaning agent to clean and remove any spilt material on the surface of the balance. First remove powder and dust, then sticky substances.

- a. For removal of powder or dust use a disposable tissue. Never blow; this could transport the dirt inside the balance.
- b. For removal of sticky substances use a damp lint-free cloth and mild solvent (isopropanol or ethanol 70%); avoid abrasive materials.
- c. Wipe away from the hole in the middle of the balance. Do not allow any substance to enter the balance's internal parts and do not spray or pour liquids on the balance. This might lead to damage of the weighing cell or other essential balance components.

## 6. Clean the removable parts.

Use a damp cloth or tissue and clean with a mild cleaning agent containing ethanol (e.g. a commercial window cleaner), or simply place them in the dishwasher.

## 7. Reassemble the balance.

Make sure the parts are correctly positioned, switch the balance on and check that it is working correctly. If completely switched off: Ensure enough warm-up time before first use (check the operating instructions for manufacturer's recommendation).

## 8. Level the balance.

- a. Ensure that the air bubble is in the center of the marked circle, and take appropriate action to re-level if it is not.
- b. Calibrate with external weights or execute an internal calibration such as FACT.
- c. Place a test weight on the weighing pan and perform a routine test to check accuracy.
- d. Test accessories (e.g. make a test printout for printers).

# General Balance Cleaning Procedure

