

Save Energy with Your Eppendorf Centrifuges

Centrifuges are part of most protocols in the laboratory. Depending on size and weight, energy consumption varies. There is a basic rule: The heavier, the faster, the cooler your centrifugation run is, the more energy will be required. Additionally, factors like room temperature, ventilation, and humidity can impact energy consumption. Still, these aspects cannot “just” be reduced to save energy – fast acceleration, high speed, and exact temperature accuracy are mandatory for high sample safety.

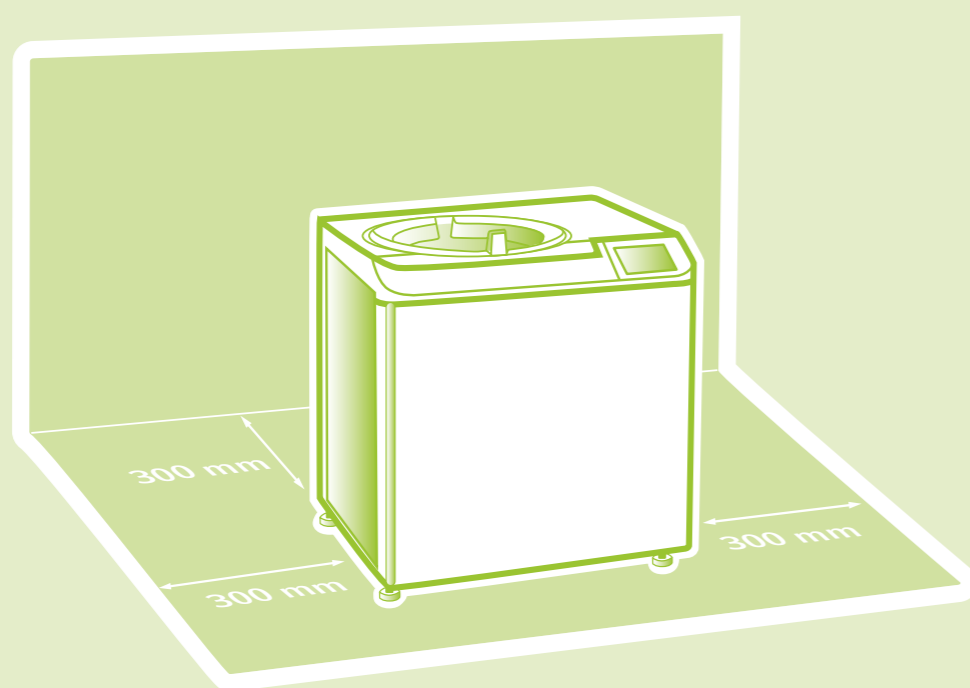
Installation

The method of centrifuge installation can impact power consumption:

- > Check instructions in the Eppendorf operating manual
- > 300 mm/12 inch from the back wall and at least 300 mm/12 inch from lateral objects. Keep distance between devices (better air movement around

the instrument) and accessibility of parts for maintenance

- > Remove packaging material or supply boxes of consumables stored near the centrifuge to optimize air movement
- > Check the room temperature at the centrifuge location, +20 °C is recommended



Cooling

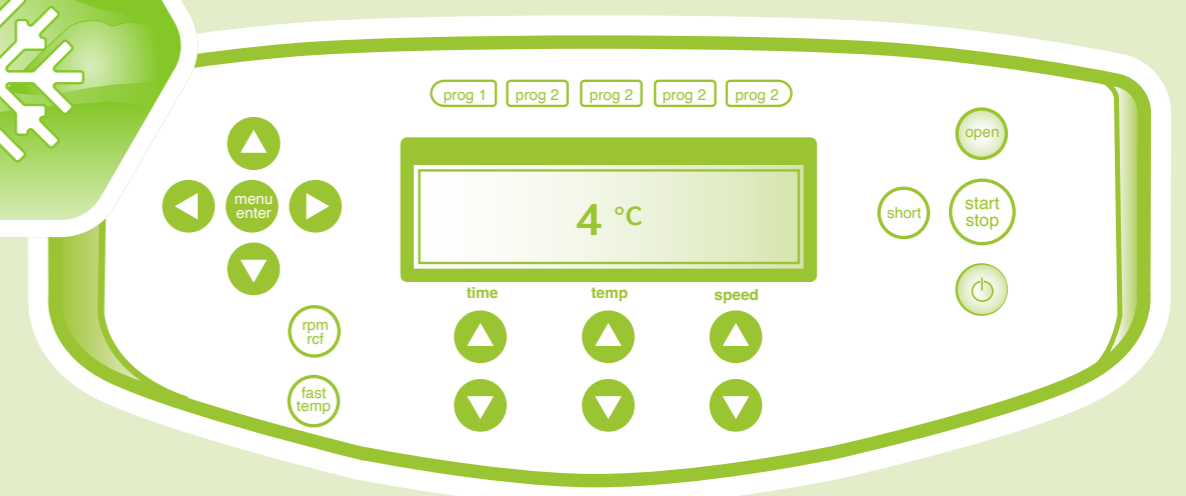
Active cooling within the centrifuge is mandatory for safe sample handling during the spinning process. The cooling process requires a lot of energy to neutralize the friction heat generated during the centrifugation process.

- > Does your sample really require 4 °C?
- > FastTemp function: Optimized program to cool down rotor and chamber efficiently

> Pre-cooling of the rotor in the fridge or freezer is not recommended as these instruments are less efficient and the additional heat input of the rotor may put critical samples at risk within the freezer

> If the next cooled run is coming soon: Keep the rotor and the rotor lid within the cooled centrifuge, keep the centrifuge lid closed

> Automatic ECO shut-off after pre-defined time of non-usage



Training

At first glance, centrifuges may seem like a simple device, but care should still be taken to ensure their proper usage. Quite often, the unit is shared by different people or even different labs.

Do You Really Know Your Centrifuge?

All users should be trained:

- > How to fix the rotor
- > How to properly open and close the rotor lid
- > How to select the right adapters
- > How to perform regular maintenance tasks

Speed versus Time

> Slower acceleration can save energy

> Shorter runs with high *g*-force or longer runs with lower *g*-force: Longer active cooling counteracts savings on lower speed



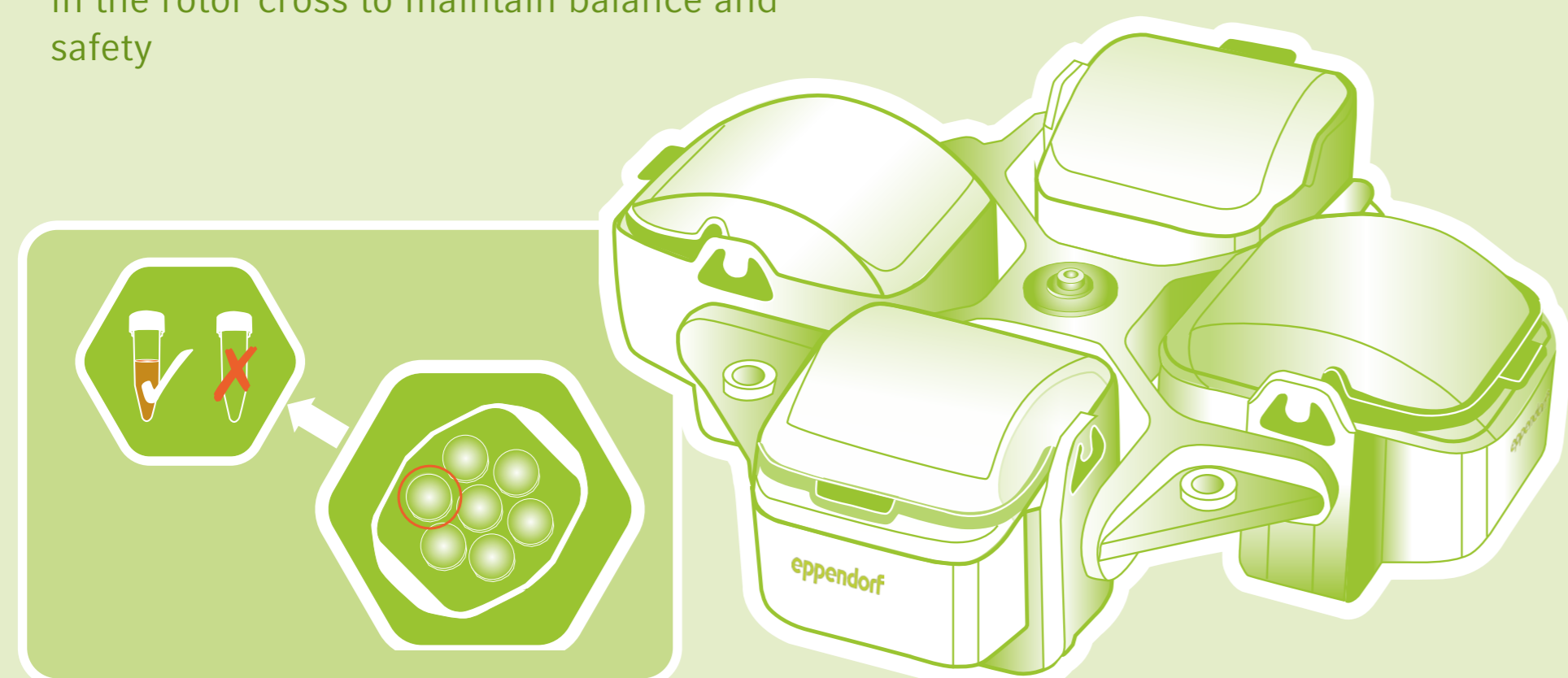
Remove Weight

Unburden your rotor and your centrifuge motor as less weight can reduce power consumption:

- > Use aerosol-tight caps as they reduce the air resistance of the rotor
- > Adapters not used within buckets can be removed. But **keep the non-filled buckets** in the rotor cross to maintain balance and safety

> Use smaller and lighter rotors if you have just a few samples. Save the heavy, high-throughput rotors for steps with more samples

> Some larger, fixed-angle rotors are hollowed out. As a result, they are far lighter compared to the non-hollowed ones



Maintenance and Service



Centrifuges are the classic workhorses in most labs, being used for many years. A few regular maintenance tasks will extend the lifetime of the centrifuge and ensure optimal energy consumption:

- > Clean rotors to avoid corrosion

Learn more from our centrifuge maintenance poster: www.eppendorf.com/epservices-centrifugation-poster

