

“What should I consider when choosing a centrifuge?”



1 The sizes of tubes you plan to spin.

This is important because, for example, if you want to spin a tube as large as a 16mm x 100mm, you need to be sure the centrifuge you choose has a rotor that fits a tube this large.

2 The types of samples you plan to spin.

This is important because, for example, if you plan to spin a chemistry sample that requires 3000 RPM's, you need to be sure the centrifuge you choose can spin 3000 RPM's.

3 How many samples you plan to spin each day.

This is important because if you spin, on average, 300 samples a day and you choose a centrifuge that only holds 6 samples at a time:

$$300 \text{ samples} \div \text{a } 6 \text{ tube capacity} = 50 \text{ spin cycles per day}$$

You want to make sure there is enough time in the day to accomplish this task. Considering how much you'll use your centrifuge is also important simply so you can determine how substantial of a centrifuge to buy. A good rule of thumb is the more you plan to use it, the more money you should spend on it.

Other Things to Consider:

Do I want brushes or brushless?

Some centrifuges have motors that use internal “brushes” to operate.

Over time, these brushes wear out and must be replaced. If you plan to use your centrifuge a lot, you may want to choose a centrifuge that is “brushless” which therefore eliminates having to replace the brushes regularly (typical use would require brushes to be replaced annually).

Why should I care if the centrifuge is linear or non-linear?

Variable speed centrifuges allow you to vary the spin speed. You set the speed by turning a dial to a setting or pushing a button. With a dial, if you set the speed to 2000 RPM's on a non-linear centrifuge, the speed will not necessarily be 2000 RPM's. With a linear centrifuge, when the dial is set to 2000, the RPM speed will be 2000. You need to determine how important exact RPM speed is to your applications.

Who needs a programmable versus a non-programmable centrifuge?

If the centrifuge you are buying will be used as a main lab centrifuge it is likely many departments will use it. A programmable centrifuge will allow you to pre-program your RPM speed and spin time so you don't have to re-set this each time you use the centrifuge. If the centrifuge will be used as a single purpose unit that will always spin the same speed and duration, you likely do not need to spend the extra money for programmability.

Is a fixed-angle rotor better than a swing-out rotor?

Swing-out rotors will typically allow you to spin more tubes at once and are usually found in larger centrifuges. They also are ideal for spinning gel-tubes because they produce a better division of serum and plasma. However, fixed angle rotors work just fine and will often produce a higher RCF than a swing out rotor.

