

Centrifuge

Principle:

A centrifuge works on the principle of **centrifugal force**. When a mixture is spun at high speeds, denser particles move outward to the bottom of the tube, forming a pellet, while lighter components remain in the supernatant.

Main Parts:

- Rotor (holds the tubes)
- Motor (provides rotation)
- Control panel (speed and time settings)
- Safety lid

Uses:

- Separation of blood components (plasma, serum, cells)
- Isolation of precipitates from solutions
- Purification of biological samples
- Microbiology and molecular biology applications

Advantages:

- Rapid and efficient separation
- Can handle small or large volumes
- Essential for clinical and research laboratories