

## Disintegration Test Apparatus



A Disintegration Test Apparatus is a laboratory instrument used in the pharmaceutical industry to evaluate how quickly a solid dosage form (such as tablets or capsules) breaks down into smaller particles or dissolves in a specified medium under controlled conditions. This test ensures that the dosage form meets regulatory standards for dissolution and bioavailability.

### Key Features:

#### 1. Design:

- Consists of a basket-rack assembly that holds the tablets or capsules in transparent tubes.
- The assembly is immersed in a fluid-filled vessel, which is maintained at a specific temperature (usually 37°C to simulate body temperature).

#### 2. Operation:

- The basket-rack moves up and down in the fluid at a fixed frequency (e.g., 29-32 cycles per minute) to simulate physiological conditions.
- The test measures the time taken for the dosage form to disintegrate completely.

#### 3. Components:

- Basket-Rack Assembly: Holds the samples in place during testing.
- Water Bath: Maintains the fluid at a constant temperature.
- Motor: Drives the up-and-down movement of the basket-rack.

#### 4. Applications:

- Quality control testing of tablets, capsules, and other solid dosage forms.
- Ensures compliance with pharmacopeial standards (e.g., USP, IP, BP, EP).
- Evaluates the performance of immediate-release and delayed-release formulations.

#### Uses:

- Pharmaceutical manufacturing for quality assurance.
- Research and development of new drug formulations.
- Regulatory testing to ensure product compliance.