

Cyclone Separator



Cyclone separators separate dust from gas streams using a combination of forces, such as centrifugal, gravitational, and inertial. These forces move the dust to an area where the forces exerted by the gas stream are minimal. The separated dust is moved by gravity into a hopper, where it is temporarily stored. Cyclone separators are used for cyclonic action to separate dust particles from the gas stream. In a typical cyclone, the dust gas stream enters at an angle and is spun rapidly. The centrifugal force created by the circular flow throws the dust particles toward the wall of the cyclone. After striking the wall, these particles fall into a hopper located underneath. Cyclone separators create a dual vortex to separate coarse from fine dust. The main vortex spirals downward and carries most of the coarser dust particles. The inner vortex created near the bottom of the cyclone, spirals upward and carries finer dust particles.

Advantages of Cyclone Separator

- Simple construction
- Have no moving parts
- Can be used as pre cleaners to remove coarse particulates and reduce load on more efficient dust collectors
- Can be designed to remove a specific size range of particles
- Constant pressure drop
- MOC: MS, SS304, SS304 L, SS316, SS316L.

Limitations of Cyclone Separator

- Have low collection efficiency for irrespirable particulates
- Suffer decreased efficiency if gas viscosity or gas density increases
- Are susceptible to erosion
- Have drastically reduced efficiency due to reduction in airflow rate
- Cannot process sticky dust

Applications Areas

- Fertilizer
- Cement
- Paint & Pigment Handling
- Mineral Processing
- Chemicals
- Petrochemicals
- Pharmaceutical
- Distillery / Brewery
- Food Industry