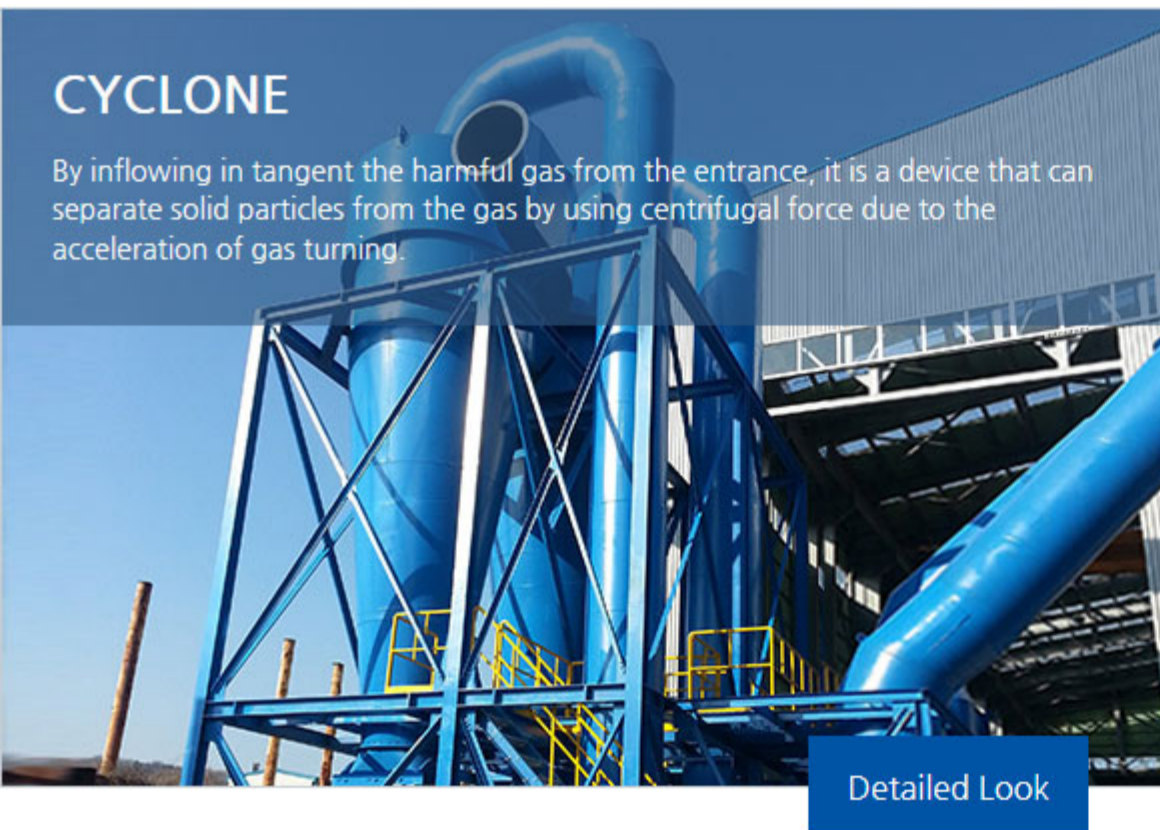


Dust Collection Principle

Due to centrifugal force that is applied on the particle by giving a turning movement to a comparatively thick and important particle, the particle is separated from the gas. It is a device that sinks and piles up dust.

It is used exclusively for dust that has big particles, thus displays a precise performance and regarding the de-dusting of small particles, it is a cyclone that is being used as a processing device of the high efficient dust collection machine.

It is being used in many areas in each factory and as the structure is simple and manufacturing cost cheap, the higher the pressure loss, the higher the efficiency. As the main factor of the performance, the pressure loss involves variables of proportion, entrance conditions and processing speed. The design must follow the conditions of the state of the dust particle, displacement, inflow speed and air blower selection as this greatly affects performance.



Characteristics

- Processing high temperatures of gas is possible and pressure loss is small.
- Dry piling up and de-dusting is possible and operation cost is low.
- It is appropriate for paved particle processing and maintenance adjustment is simple.
- Dust pile up efficiency is low (If 10um or lower)
- Hard to handle moist dust.
- Sensitive to change of dust amount and flow.

Applied Area

Boiler dust / cement producing factory and stone smelting factory / wood factory and paper pot factory / latter equipment of incinerator / preprocessing of preventative facilities.

Type

Tangential Entry Type Cyclone

There are direct and spiral types that can tangentially flow harmful gas to the outer shell. Usually, the speed of the inflowing gas is 7~15m/sec and in this scope, the influence of harmful gas due to gas speed is small and the internal diameter is a major factor that controls the performance. The pressure loss is around 100mmH₂O at the direct type when the speed of the entrance gas is 12m/sec and at the spiral type, the pressure loss is about 20% less than this.

Multi Cyclone

It is used when there is high processing gas amount and when high dust collection efficiency is needed. Using small internal diameters when connecting small diameter cyclones makes the cyclone become blocked well as well as rendering huge problems mechanically due to a substantial increase of pressure loss. The processing gas entrance is parallel to the side of the centrifugal dust collection machine and processing gas is flown in from the upper part of the dust collection machine. Following the helical form guide vane installed in the entrance, it becomes a vortex and after being flown into the lower part, it is emitted via the exit after reversal in the lower part. It can process about three times the gas amount compared to the tangential inflow type and it is easy to distribute uniformly the harmful gas to the unit cyclone. The speed of the entrance gas is around 12m/sec and pressure loss is about 70~80mmH₂O.