

HIGH
EFFICIENCY
CYCLONES



MIKROPUL

DUST COLLECTION
GAS CLEANING
PRODUCT RECOVERY
ENGINEERING
SERVICES

MIKROPUL HIGH EFFICIENCY CYCLONES

MikroPul High Efficiency Cyclones are the most cost-effective solution for separating dry particulate material (5 microns or larger) from gas streams.

With more than three decades of experience in research, design, and successful commissioning of cyclones, we have the expertise to select the appropriate design to meet the most demanding needs for any application in the industry.

MikroPul Cyclones feature robust construction for long term, trouble-free service. Careful design results in high efficiency at low pressure drop to keep operating costs low.

Benefits:

- Low initial cost
- Low operating expenses
- No moving parts
- Minimal space requirement

System design

Seemingly a relatively simple device, a cyclone consists of components which must be optimized for the application and properly work together to achieve maximum dust removal efficiency.

Consideration is given to the simultaneous forces dust particles are subjected to:

1. Viscous drag or resistance, which is a function of the relative velocity between the carrier gas and the dust particle, its shape and size, and gas viscosity. Each particle must overcome resistance as it moves through the carrier gas stream.
2. Centrifugal force, which is affected by velocity, cyclone curvature profile, and the particulate mass.



Gas flow in Cyclone



Quad Cyclone

3. Particle inertia, whereby the particle would move in a straight line if not subjected by the other forces.

Based on careful evaluation of your application, MikroPul will custom select:

- Single, twin, or quad arrangements
- Outlet to inlet geometry
- Cyclone dimensions
- Cone length

Design types

MikroPul supplies cyclones for gas flows from 200 to 200.000 m³/h. We can also custom design the following enhancements as required:

- Multi cyclones
- Design for pressure up to 70 bar
- Internal surface finishes to minimize abrasion and build-up caused by sticky particulate
- Wear liners, fixed or removable
- Refractory lining for high temperatures (up to 1.700°C)
- Jacket design for cooling or heating
- ASME or other industrial standard coded construction
- Stainless steel or other weldable alloys

Operation

Particle laden gas enters the cyclone through a tangential inlet, which imparts a vortex motion to the stream causing the particles to concentrate along the wall. The stream (called the descending vortex) spirals down the cyclone barrel toward a bottom cone which opens into an expansion chamber.

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Double-Quad Cyclone in stainless steel for S-PVC production



Wear resistant Quad Cyclone in incineration plant



Heated Twin Cyclone for slurry dedusting (74.000 m³/h)

Particle inertia forces the particles to the wall of the expansion chamber, while the lighter gas stream forms a separate vortex (caused by drag) ascending through the center of the descending vortex.

The cleaned gas exits through a tube extending into the center of the main chamber. A tangential outlet removes the cyclonic action of the gas stream.

Applications (Examples):

Chemical

- Reactors
- HDPE
- PP
- PVC
- Methyl cellulose

Iron and Steel

- Sintering
- Pelletising
- Rolling mills
- Sand recovery

Mining and Raw Materials

- Driers
- Carbon black
- Metal powder
- Salts

Coal

- Pulverized coal collection
- Lime
- Ash

Food

- Tobacco
- Coffee/Cocoa
- Flour

Other Industries

- Powder coating
- Sawdust
- Wood chips

Pneumatic Conveying

- Product recovery

MIKROPUL SUPPORT

Maintenance

MikroPul backs up our products and systems with worldwide customer support. Contact us any time you need help.

Spare parts

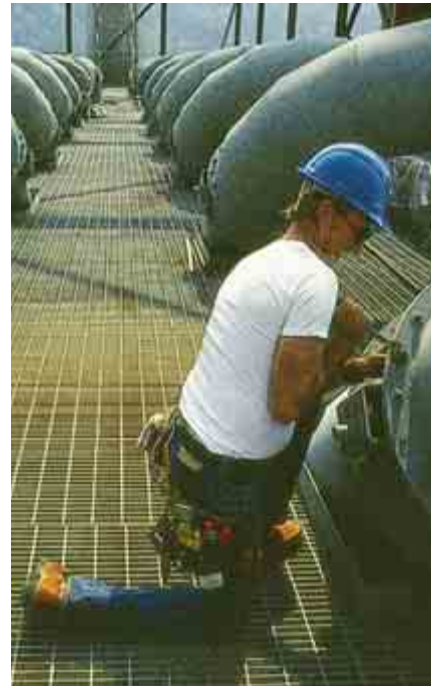
MikroPul systems are known for long lasting, reliable operation. Using original MikroPul spare parts ensures that your plant always operates with maximum performance. We supply a full line of parts, from gaskets, filter bags and hinges or timers and differential pressure gauges to major components, for all our products. High wear items are kept in stock for immediate shipment.

Service

MikroPul provides an array of services to help you select, install, operate, and maximize your equipment investment. If your collector needs upgrading to meet increased demands or process changes, our engineering and service staffs are here to help you.

Services include:

- Process analysis
- Inspections of plants and components
- Converting old equipment to new technology
- Conversions/Replacements
- Maintenance seminars
- Technical trainings



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