



filtrabit

DC201 & DC401 dust collectors

Filtrabit's patented innovation for separating fine dust particles from air is based on the principles of **flow-dynamics**.

Unprecedented performance of the **separation cone** at the heart of the technology enables industrial clients to reduce their particulate emissions and meet strict environmental regulations.

	DC201	DC401
Separation cones	2	4
Air flow	2 400 m ³ / h	4 800 m ³ / h
Air temperature	Up to 500 °C	
Separation performance	150 kg / h*	300 kg / h
Separation capability	>99%* for PM2.5 and larger >96%* for smaller than PM2.5	
Dimensions	6.05m x 2.44m x 2.90m	
Weight	4 500 kg	5 000 kg
Dusty air intake	DN200	DN300
Clean air outlet	DN200	DN300
Dust outlet	DN80	DN80
Power	400 V / 160 A	400 V / 200 A
*Proven in continuous operation with coke dust at the SSAB coke sieving plant in Raahe, Finland.		



Capital efficient solution

Filtrabit can offer dust separation as a **turnkey solution**. It includes the operating lease of the dust collector, as well as complete designs for the **ducting, hooding and dust handling systems**.

The operating lease option eliminates the need for large capital expenditures.

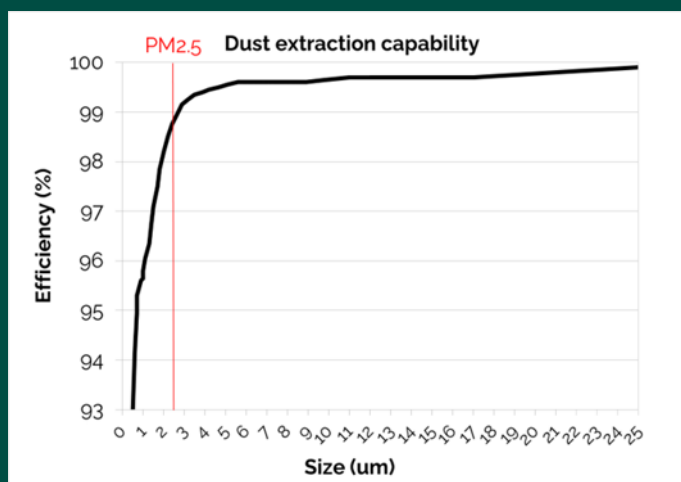
A constantly moving regulatory landscape provides more reason to look for a more flexible solution.

Modular units on the spot

Compactly sized units are serially produced and portable, allowing for quick installation and a flexible placement close to the source of the dust.

The DC201 and DC401 dust collectors are built on a pallet and fit inside a standard shipping container, eliminating the need for construction work.

Units can be mounted side by side and on top of each other, enabling exact tailoring of capacity.



Dust extraction measurements from the coke sieving plant of SSAB in Raabe, Finland.

High performance

The separation cone of the Filtrabit dust collector has been proven to be highly efficient in separating large volumes of coke dust.

The DC201 system with 2 separation cones can extract 150 kilograms of coke dust per hour in continuous operation.

The separation efficiency has been measured to be **above 99% for particles over 2.5um in diameter (PM2.5)** and above 96% for smaller particles.

Working principle

Main parts

- Pre-separator
- Separation cone
- Dusty flow filter
- Vacuum pump
- Dust screw conveyor

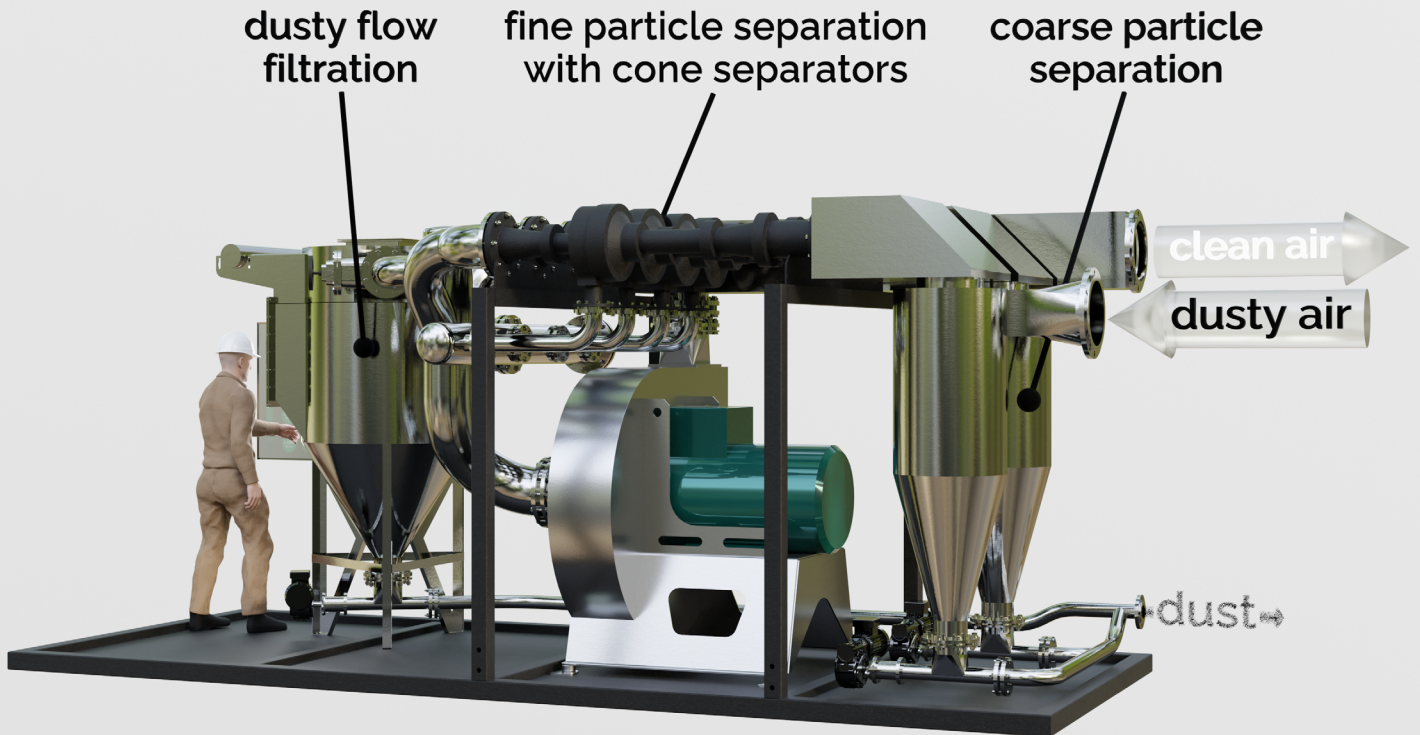
Flow of operation

Dusty air is first brought into the coarse pre-separator, which removes the larger particles.

Finer particles continue to the separation cone, which extracts them using Filtrabit's patented method based on flow-dynamics.

Cleaned air proceeds directly to the clean air outlet, while the dusty flow continues on to the dusty flow filter.

After being filtered from residual air, the pure dust is fed into the screw conveyor, which delivers it out of the system through the dust outlet.

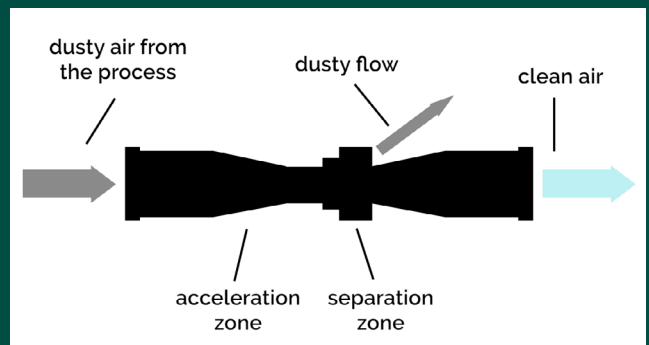


Separation cone

In the separation cone, gas flow gets speeded up as it travels through the acceleration zone.

Particles separate by mass and get diverted to a separation chamber, from where the dusty flow continues on to the dusty flow filter.

Meanwhile, clean air flows directly through the center of the cone, on towards the clean air outlet.



Applications

Filtrabit's dust collectors are suitable for various industries that produce dust.

- **Steel manufacturing**
- **Cement production**
- **Mining and quarrying**
- **Foundries**
- **Machinery workshops**

DC201 and DC401 are designed to operate close to the dust source. Typically the system's dusty air inlet is connected to a dust collector hood, which prevents high dust density air from mixing with the ambient air.

This minimizes the air volume that needs to be cleaned, and enables efficient energy recovery from high temperature air, immediately after cleaning.

The most effective application is a **closed loop solution**, that is essentially free from emissions.

Typical dust to be collected is dry and relatively dense, approximately 1 kg/liter or more.

As part of the standard process, Filtrabit performs a test of the client's dust sample and provides clear indication of the separation performance.



Benefits

- **Operating lease model** removes the need for large investments.
- Compact and portable modular units can be brought where dust removal is needed.
- Capacity can be scaled according to need.
- Can be used concurrently with existing dust removal systems like bag filters, increasing performance and **lowering maintenance costs**.
- Excellent efficiency cleaning high dust density gases helps **meet environmental regulations**.
- Separated material can be easily recovered for further economic and environmental benefits.
- Made from durable steel and able to handle coarse and abrasive particles.
- Suitable for high temperature gases, enabling **waste heat capture**.