



**Dust suppression for bulk transfer points**

**Made in Germany**



**State of the art  
electrostatic precipitation**



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# 1 Effective Dust Suppression

**Low energy consumption**

**High separation efficiency**

In many industrial applications, especially in the bulk industry, dust problems affect the conveying process, the electrical and mechanical components and even more important, **people and the environment**.

This is why it gets more and more important to reduce the dust emissions effectively using the technology with the lowest energy consumption possible.

This is a challenge that **DocDust** took up, and started producing **AY500** (low maintenance) and developing the **DDUST** (maintenance free) dust suppression system.

DDust is a new, ionization-based dust suppression system, which was originally developed by a Swedish company, particularly for controlling dust problems at “**belt conveyor transfer points**”.

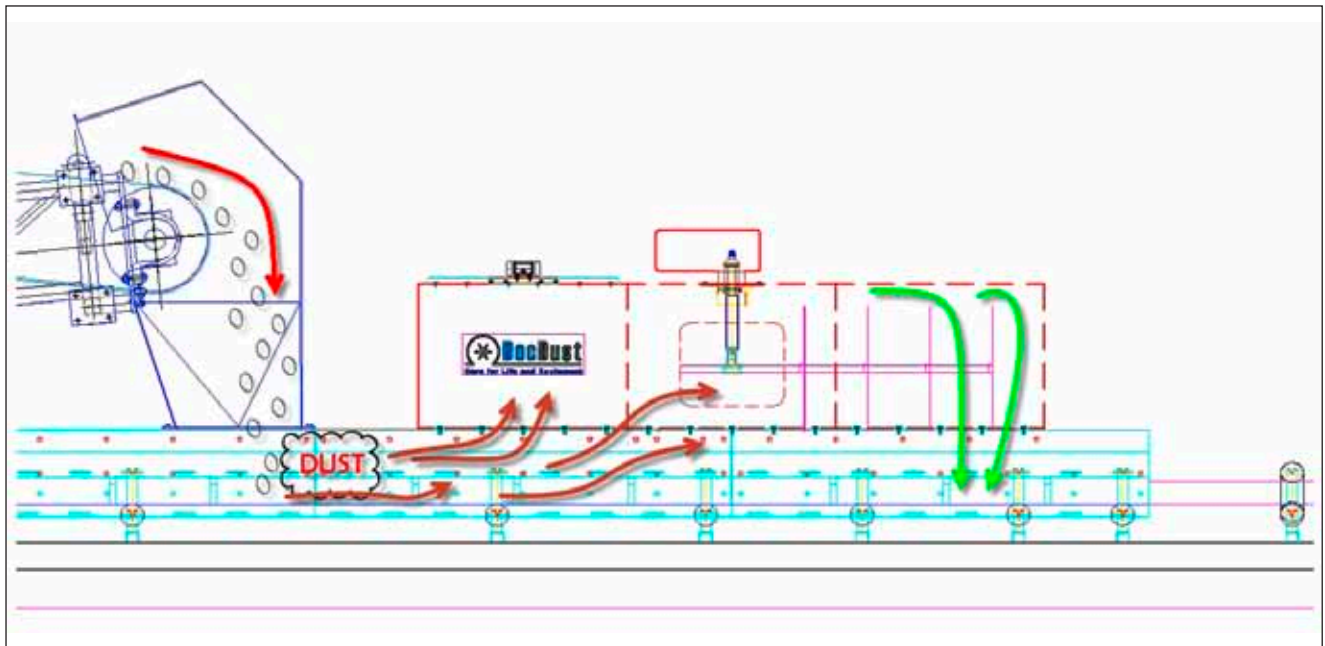
The **AY500** and **DDust** systems are the only **state of the art** electrostatic dust suppression system for belt conveyor transfer points in the world operating only with electrostatic forces.

## 2 Mode of operation

The electrostatic dust suppression systems AY500 or DDust are installed at the outlet of the chute, directly on top of the conveyor belt.

The dust and the bulk is lead through the DDust housing (below). Where the airborne dust particles get charged and collected on the stainless steel housing.

Intermittently a vibrator shakes the housing and the dust falls off and back into the material stream.



*Typical installation behind the chute*

**Standard units for belt width 500 – 1400mm**  
**Dust suppression units for bigger belt width on request!**

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## 3 Fields of Application

### Bulk industry

The DDust sand AY500 systems can be used on nearly all bulk materials.

Main application areas on bulk transfer points in following main industries and materials:

Industries	Bulk materials
Mining	all kind of ores
Quarry	all kind of minerals
Steel	sinter, limestone, additives, fly ash
Cement	limestone
Fertilizer	potash
Foundries	silica and quartz
Glass	dust from glass culets
Sand and gravel	silica and quartz
etc.	

It can also be adapted to mobile screens and mobile crushing units in quarries, mines, open pit and underground.

**AY500 and DDUST must not be used on explosive or flammable dust materials!**

## 4 Technical Data

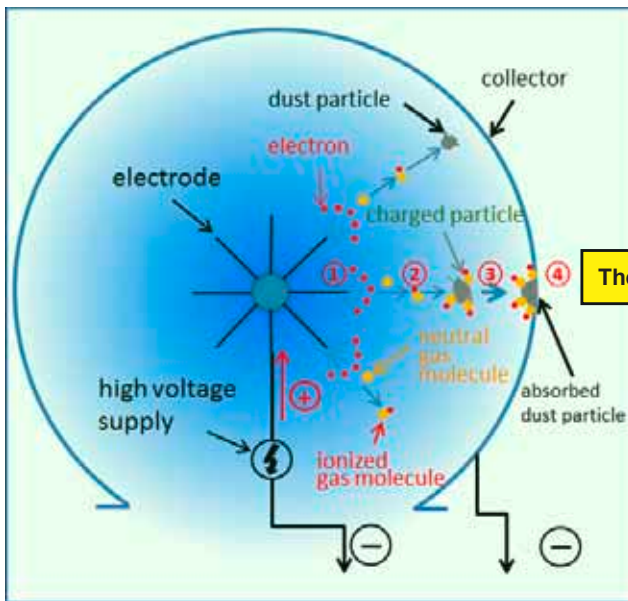
Input / Power feeding	110 – 230V/AC; 50 - 60Hz
High voltage Output	35 – 120kV/DC; 0,5 - 5mA
Control signal	normally open switch (NO); potential-free
Disturbance signal	normally open switch (NO); potential-free
Grounding	16mm <sup>2</sup> to the equipotential bonding conductor
Energy consumption	0,2 – 1kW
Length	1000 – 8000mm (modules of 1000mm each)
Height	800 – 1400mm

## 5 Theory

### Particle charging

#### Principle of precipitation

The principle of operation is based on the principle of a precipitator.



*Principle of precipitation*

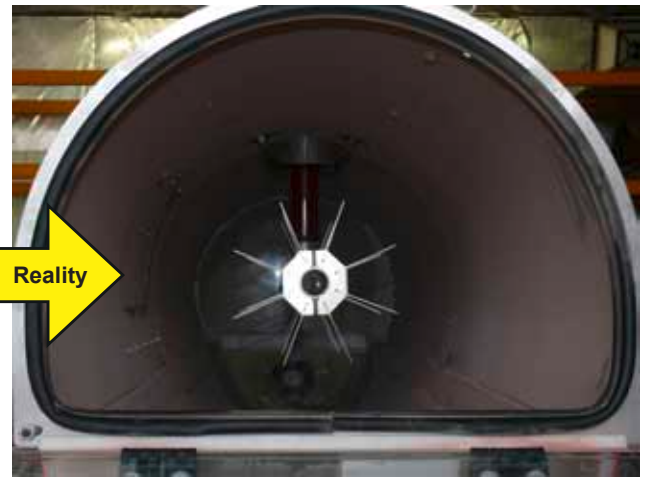
#### Dust suppression in 4 steps:

1. Generating free electrons
2. Ionizing the gas
3. Charging the dust particles
4. Collecting the dust particles at the collector surface

## 6 Experiences

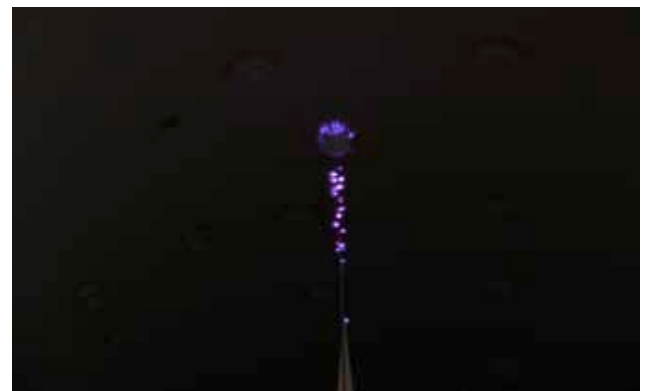
The dust suppression efficiency of AY500 and DDust are depending on several influences.

Mainly the electrostatic properties of the dust and the velocity.



*Insight into the laboratory test unit*

Taking this into account DocDust designs and calculates the right system for every application.



*Corona at the tip of electrode type C*



## 7 Advantages

Guaranteed dust suppression rate  
Extremely low operating cost  
Extremely low power consumption  
Extremely low maintenance  
(no extra down time required)

No water required  
No change of material properties  
No loss of material

## 8 Development

**electrodes designed to demand  
& from low to nearly no maintenance**

Our products are manufactured 90 % in our own facilities. Electronic layouts, designs and mechanical components and any kind of electrical or mechanical development is carried out in-house. To enable guaranteed dust suppression results, DocDust has developed different electrode designs for each application.



*Electrode type N*



*Electrode type S*



*Electrode type C*

Normal maintenance interval for **AY500** systems is once per month (app. 15 min.)  
DocDust has developed an automatic cleaning system for DDust systems which enable maintenance necessity of only once per year (app. 1h).



*Automatic cleaning system DDust*

# DocDust GmbH

## **Enterprise, target and manufacturing**

DocDust is a company with profound experience in dust suppression.

We focus on the support of all bulk handling industries with products and consultancy for avoiding dust emissions and their negative consequences.

We are working together with the company Meissner Mechanik GmbH which has been the supplier of electrostatic dust suppression housings for the last decade for a Swedish company.

Our products are manufactured 90 % in our own facilities. Electronic layouts, designs, mechanical components and any kind of electrical or mechanical development is carried out in-house.