

Surface dust removal system

System description

The **Xstream** and **Xstream ULTRA** non-contact web and sheet cleaners adopt a revolutionary approach to improving quality, reducing downtime and boosting profitability. They combine the latest aerodynamic nozzle technology with a defined high speed vacuum airflow and an intelligent micro-processor controlled static neutralising system prior to cleaning within one turnkey solution.

The operational principle behind the system comes from proven research and development carried out within the aviation and aerospace industries. By utilising special edge shapes and profiles, the air is forced into certain directions at extremely high velocity. Hildebrand Technology uses this technology and has developed its **Xstream** surface cleaner based on that knowledge.

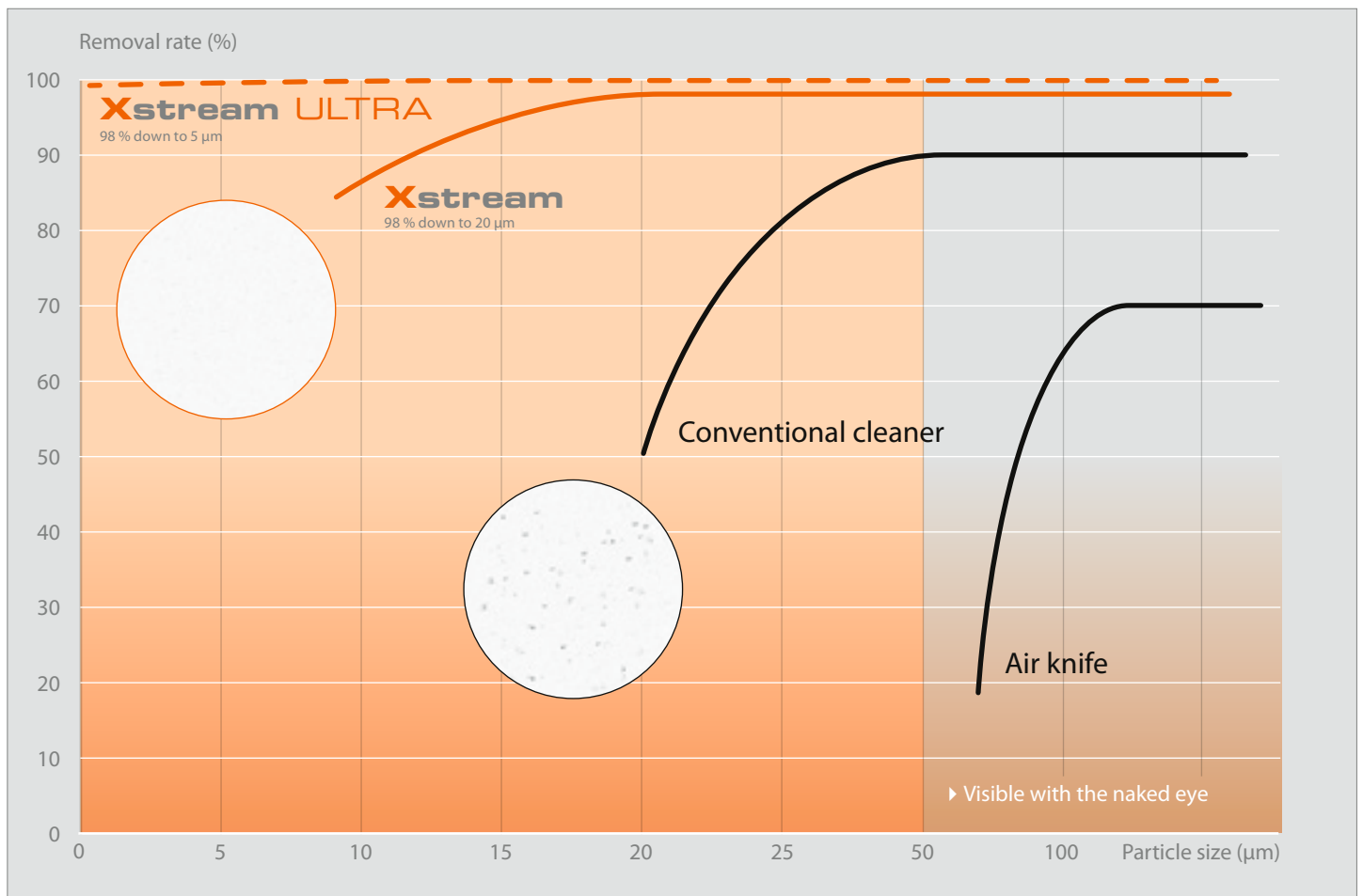
The **Xstream** accommodates splices automatically and is available for use on web widths from 300 mm up to 12 metres in either a single or a dual side surface cleaning configuration. The compact design minimizes the space requirements for installation.



Nozzle principle Xstream



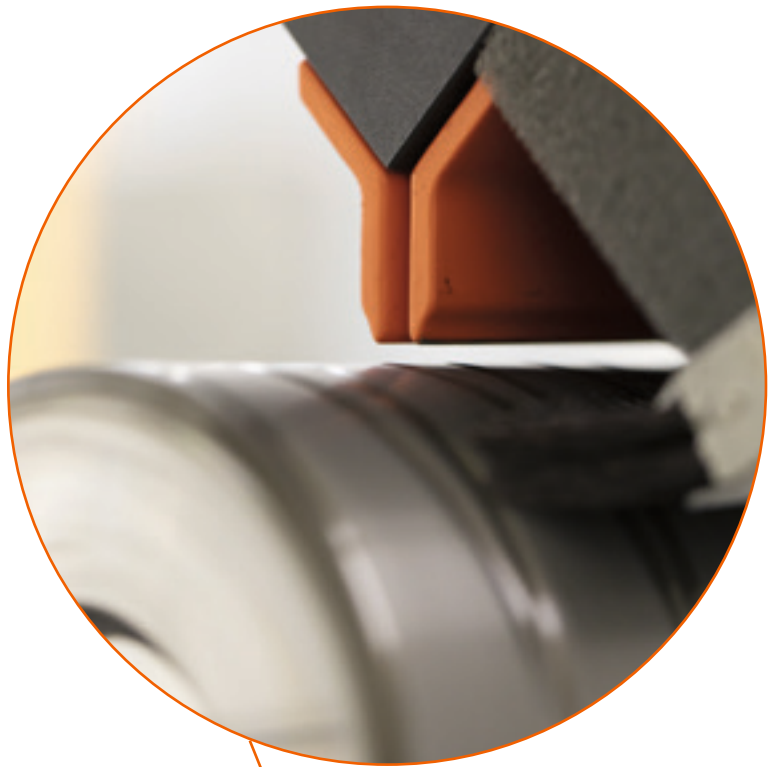
Nozzle principle Xstream ULTRA



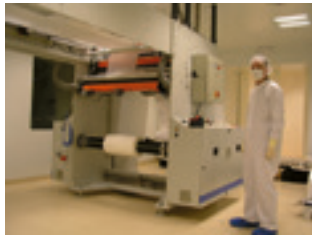
System cleaning efficiency comparison

Applicable in many areas

The Xstream and Xstream ULTRA surface dust removal systems can be used in many different applications. Their modular design and the flexible high velocity vacuum nozzle technology allows the installation of these cleaning systems starting at paper and cardboard applications all the way up to high-end clean room systems, where individual high-tech substrates need to be **100%** cleaned.



Xstream
Printing/converting paper, cardboard & corrugated production/processing textile, tissue & non-woven



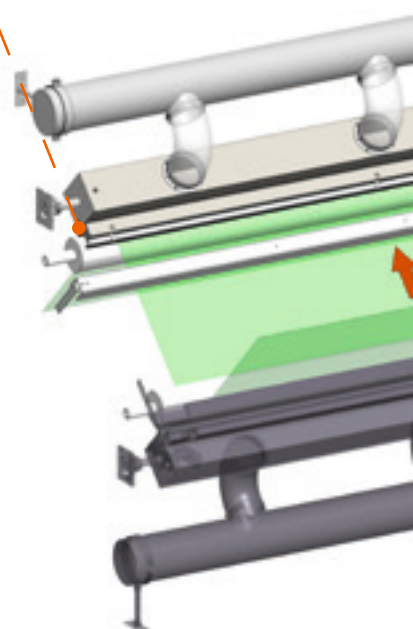
Xstream ULTRA
Pharma/clean-room optical films, semi-conductor & glass coating/laminating film & foil

Monitoring & Communication

Flexible configuration and integration

With the new generation of the iONcontrol you have all functions and parameters under control.

- The comfortable touchscreen with its modern icon user interface enables easy and intuitiv handling for every operator.
- The iONcontrol system is designed to be networked with all components.



Production data acquisition and access

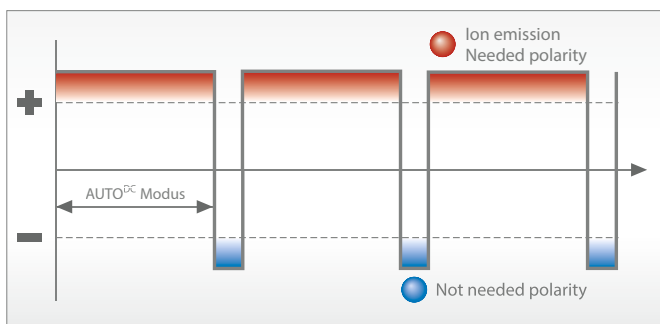
Technology

The special aerodynamic nozzle of the Xstream and Xstream ULTRA which is positioned close to the surface of the substrate generates, through the combination of vacuum in the cleaning module and web speed, an extremely high velocity airflow (>60 m/s). The high velocity air flows along the substrate surface to the nozzle edge and into the cleaning module. The high velocity airflow breaks the boundary layer on the substrate and forces the particles that were trapped in this layer into the cleaning module. From the cleaning module the particles are transported to a filter unit.

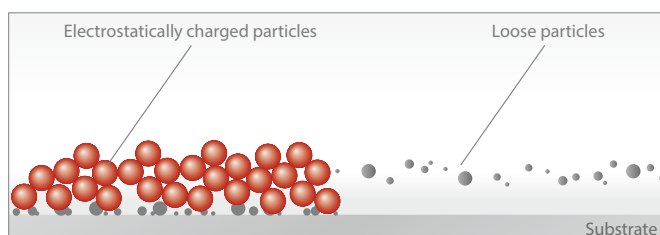


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In most cases electrostatic charge present on the substrate surface is a major factor in increasing contamination and makes particle removal more difficult. It is well known that insulating materials such as film generate static charges by friction. This electrostatic charge also increases the bond between the particles and the substrate surface. The electrostatic charge can attract additional particles which are in close proximity to the substrate surface. The smaller the particle size, the greater is the force of the electrostatic field holding the particle down. This is why our static control system is always installed prior to the cleaning process to



AUTO DC Technology®



Particle behaviour without and with ionisation

guarantee a neutralised substrate surface and therefore facilitate easier removal of all particles by the Xstream. Our experienced application engineers can evaluate your machine and propose a solution for the implementation of Xstream or Xstream ULTRA into your production process.

Xstream System advantages



Application:

- Removes > 98 % of loose particles > 5 µm with Xstream ULTRA
- Vacuum air speed > 60 m/s
- AUTO DC Technology® static neutralising system
- Network compatible, internal CANopen bus to communicate with touch panel or „Anybus“ Gate-Way
- Can be retrofitted to all machine types
- Wear-free, minimised maintenance
- Including filter technology
- Easy and flexible installation

Economical:

- Increased profitability
- Reduced waste and down time

Safety:

- Shock proof according EN norm
- ATEX certification for zone 1  II 2G IIB T6
- ATEX certification for zone 21  II 2D IIIB T85°

Ecological:

- No consumables, no washing liquids
- 30% lower energy consumption compared to other systems in its class



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Surface Dust Removal • Electrostatic Neutralising • Electrostatic Charging • Measurement Systems

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