

Dust cleaner uses aeronautic technology
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ACCORDING TO converting equipment specialist Webtek, a major problem with so-called 'low cost' substrates is the dust contamination. During the process of slitting the individual reels to custom widths during conversion dust is generated. Dust particles and fibres mainly contaminate the edges of the substrate and remain there during the winding process.



After unwinding these same particles get transported along on the substrate surface into the production process. These particles do not just lower the quality of the final product they also cause additional cleaning down time and therefore increase production costs.

Webtek represents Hildebrand Technology and describes its Xstream surface cleaner as a non-contact cleaning system that uses a high velocity airflow to remove particles. By removing contamination from the substrate surface prior to subsequent production processes the quality of the final product is substantially improved. This improvement of the final product is also noticeable when a low quality substrate or a substrate with high recycling content is being used. Additional problems resulting from the contamination of the substrate are also solved at the same time when utilizing the Xstream non-contact surface cleaner.

Principle of function

The Xstream surface cleaner uses a special aerodynamic nozzle located very close to the substrate surface. Our static neutralizing system, which is positioned prior to the cleaning process, guarantees that the particles are no longer attached due to static charges. An optional stationary brush can be used which loosens slightly attached particles mechanically. With this technology the efficiency of the systems is superior and will reach removal rate results of up to 98 percent.

The technology

The system was developed utilising technology used in the aviation and aerospace industry. Specially shaped edges and profiles force air in certain directions at extremely high velocity. Hildebrand Technology uses this technology and has developed its Xstream surface cleaner based on that proven research.

The aerodynamic nozzle generates, through the combination of vacuum in the cleaning module and web speed, an extremely high velocity air flow of up to 60m/s which flows along the substrate surface to the nozzle edge and into the cleaning module. This 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.