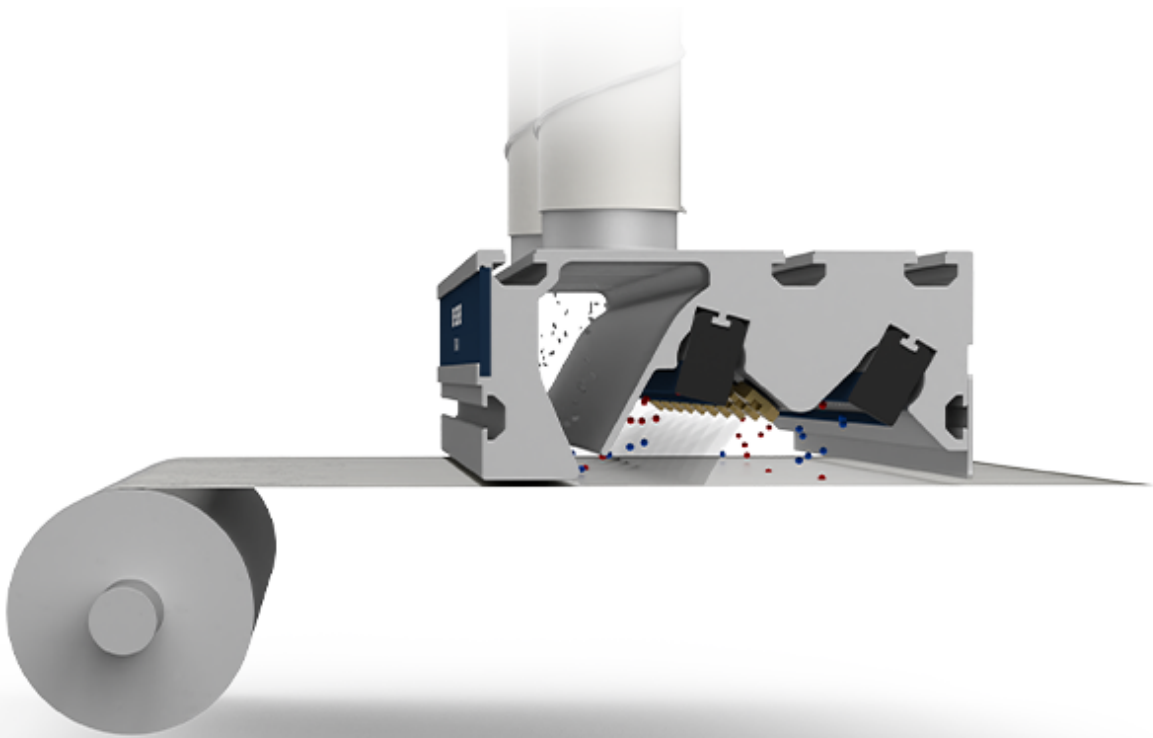


STATIK-AIR® Technology

Compressed air assisted discharge and non-contact surface cleaning for flat and 2D structures



Key Facts

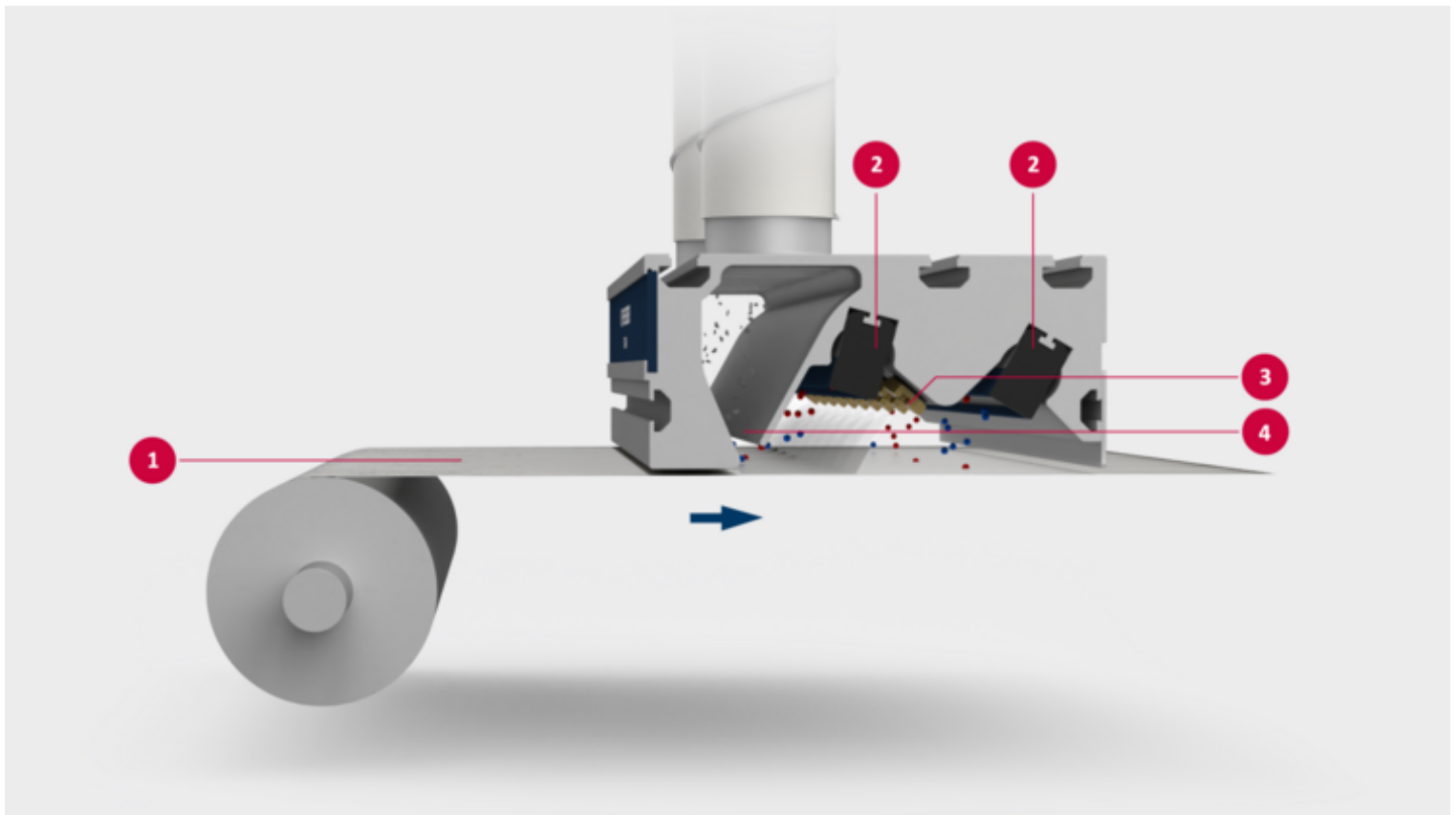
- ✓ **Ionisation with compressed air support** via static flat jet nozzles
- ✓ **Comprehensive cleaning of the entire surface**
- ✓ **Contactless cleaning** protects the material surface
- ✓ Particularly suitable for **webs, sheets and panels**

Description

Our STATIK-AIR® technology provides a reliable solution for effectively eliminating electrostatic charges and removing interfering dust and material particles. Electrostatic charges can be neutralised quickly and over long distances by combining compressed air and ionisation. Active ionisation generates positive and negative ions that are transported with precision to components or materials using special compressed air nozzles to neutralise and simultaneously clean surface charges.

For more complex cleaning tasks, it is often not enough to simply blow off contaminating particles. For these applications, it is crucial to combine cleaning with suction and filtration. Our STATIK-AIR® technology therefore offers models with an integrated suction channel that will effectively remove dirt and particles from component surfaces in dust-sensitive production environments. These non-contact systems ensure special protection for the surfaces and a thorough cleaning process.

Operating Principle



1 Material to be cleaned

2

Ionisation

Electrostatic binding forces between material and particles are actively neutralised with focused positive and negative ions. These ions are attracted to the oppositely charged areas of the material surface respectively.

3

Flat jet nozzles

Flat jet compressed air nozzles generate a precise, sharply bundled airstream, which removes contaminants over the entire working width focused against the direction of the material passing through and transports them toward the suction system.

4

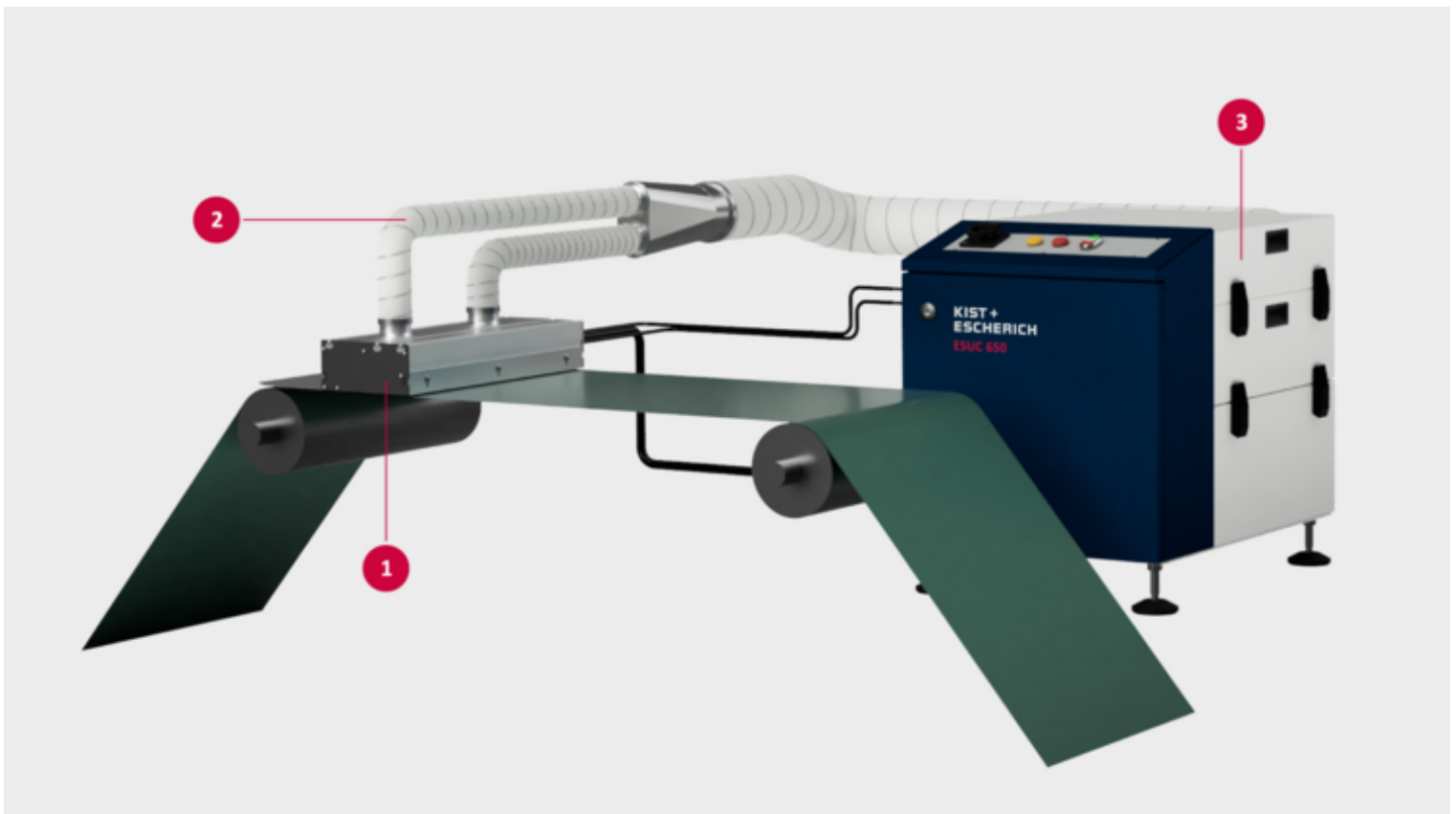
Suction

The dust-laden output air is safely captured through the suction channel integrated into the STATIK-AIR® and fed to the ESUC suction and supply unit.

Note:

To ensure that the particles accelerated by the compressed air can be suctioned off reliably, an air guide plate is required in the inlet and sufficient web tension must be provided, e.g., via idler pulley – otherwise there is a risk that the material will succumb to the suction.

System Installation



1 STATIK-AIR® cleaning system

The compressed air-assisted ionisation electrodes/cleaning modules STATIK-AIR® are mounted in the production line with the required working width and at a suitable distance above the surface to be ionised/cleaned.

2 Suction system accessories

Suction hoses are fitted to the suction port of the cleaning system with hose clamps. Suction hoses of smaller diameters can be modified to a larger diameter with only minor loss of power by using adapters to bridge the distance between the cleaning module and the ESUC suction, filter and supply unit.

3 ESUC Suction, filter and supply unit

Dimensioning of the suction power needed depends mainly on the amount and type of particles to be removed, the working width of the cleaning system, and the length and installation of the suction hoses used. A range of devices with different suction power capacities and various options for control and monitoring are available. Your technical contact will advise you on the best system selection and configuration.

STATIK-AIR® without suction:

The HV supply is provided via a PU55/60 POWER UNIT or COMBI- BOX.

STATIK-AIR® with suction:

An integrated HV power supply, compressed air filter control valve, magnetic valve, suction fan and dust filter are connected to an ESUC supply unit.

Fields of Application

- **Automotive industry:** Green foils, ceramic foils, cathodes, anodes, battery foils, functional surfaces, smart surfaces, painting, displays, image foils, faceplates, decorative trims
- **Construction & industry in general:** Wallpaper, floor coverings, adhesive films, labels, adhesive tapes, laminating, embossing films, smoothing, calendering, fibre composites, pressed sheets, surface films, acrylic glass panels, roller shutters, window protection, fibre materials, sandwich composite panels, seals, extrusion sheets, masking films
- **Food industry:** Labels, tags, plastic films
- **Medical engineering:** Medical films, labelling protection
- **Furniture industry:** Furniture foils, decorative foils, leather, laminates, edge strips
- **Sports and leisure industry:** Textile coatings, functional textiles, tennis strings, ski skins, skis, playground mats, mats, skateboards

- **Printing industry:** Securities, ID documents, banknotes, chip cards, packaging, document printing, holograms, product and trademark protection, electronic passport, digital printing, digital sheet-fed printing, offset printing, sheet-fed offset printing, newspaper printing, flexographic printing, corrugated direct printing, web digital printing, web offset printing
- **Packaging and logistics:** Films, paper, cardboard, corrugated cardboard, interlayers, trays, boxes, containers, pallets, edge trimming, peeling films, embossing foils, decorative foils, protective foils
- **Plants and mechanical engineering:** Rollers, tool cleaning, painting systems, 2D surfaces, conveyor belts
- **Electronics:** LED foils, displays, touch screen foils, cable sleeves, cable sheaths, unpopulated PCBs, SMD, SMT, bonding, PCB assembly, PCB mounting, semiconductor manufacturing, wafers
- **Other:** Book paper, fibre production

Related Products



STATIK-AIR® 03 →

Compressed air assisted
ionisation system with
single-track ionisation



STATIK-AIR® 06 →

Compressed air assisted
ionisation system with
single-track ionisation



STATIK-AIR® 07 →

Compressed air assisted
ionisation system with two-
track ionisation



STATIK-AIR® 08 →

Surface cleaning system with
suction channel and two-
track ionisation for flat parts
and webs



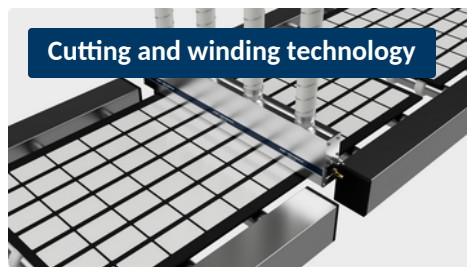
STATIK-AIR® 09 →

Surface cleaning system with
suction channel and single-
track ionisation for flat parts
and webs

Use Cases



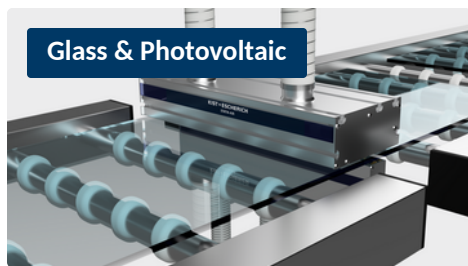
Cleaning Film and Foil Webs



Cleaning of Chip Cards



Cleaning of Extrusion Profiles



Avoiding Particle Entrapment during Glass Processing



Cleaning of Film, Foil and Paper after Longitudinal Cut



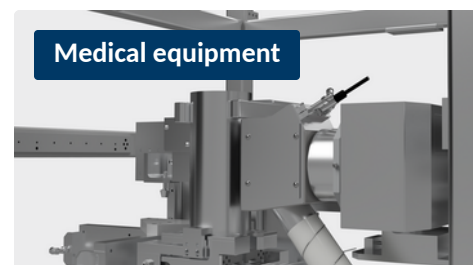
Cleaning of Flat Conveyor Belts



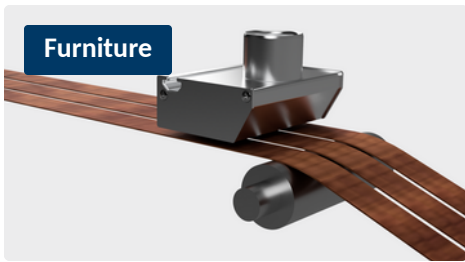
Cleaning of Laminated Panels/Hpl Panels



Cleaning of Laminated Panels/Hpl Panels



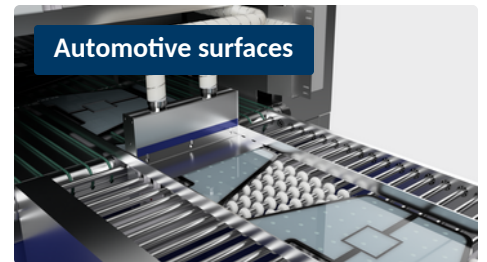
Surface Cleaning during Laser Processing



Cleaning the Edge Strip
prior to High-Gloss
Painting in the ATEX
Hazard Zone



Packaging of Pill Bottles



Cleaning of Display Glass
for Digital Speedometers