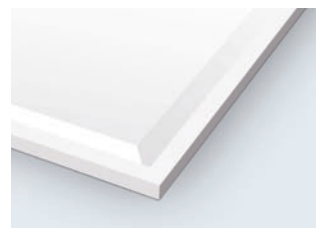


Effective surface cleaning for boards, panels and laminates

Combi Sword Brushes for industrial panel production

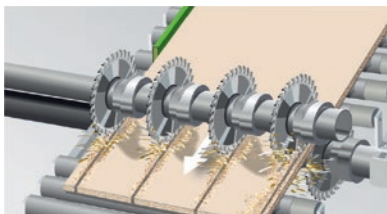


WANDRES
micro-cleaning

Convincing, effective solutions – Wandres guarantees for clean product surfaces

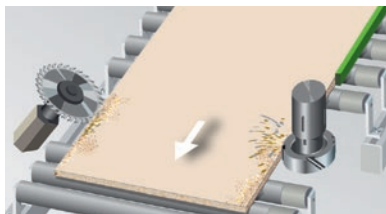


Typical cleaning applications



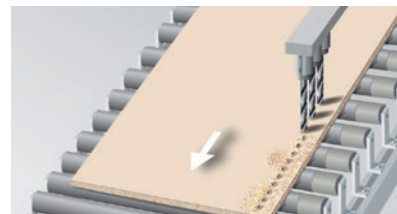
After sawing

During the sawing process large amounts of fine, very hard dust particles will occur that need to be removed reliably before further processing.



After edge processing

Particles, chips and fine dust particles may scratch the surfaces and need to be removed entirely.

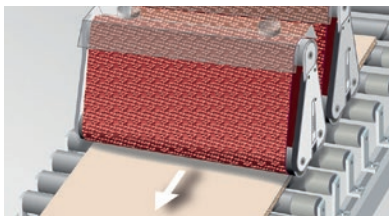


After drilling and milling

Particles gather within bore holes and grooves. They may disturb subsequent production processes.

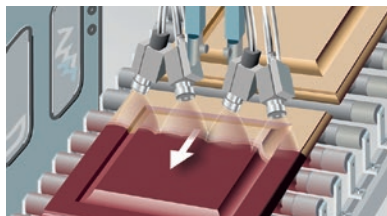


During production of high-end boards and panels, product surfaces need to be dust-free. Particles and dust may lead to a considerable loss in quality during downstream processing. Wandres Combi Sword Brushes provide for an effective and reliable cleaning process within modern production lines.



After sanding

Even very fine sanding dust may disturb the application of decorative films and lead to particle inclusions.



Before lacquering

Flawless surfaces are a must if high-end furniture parts need to be lacquered or powder-coated.



Before stacking

Contaminated conveying systems such as suction cups or conveyor belts may lead to surface errors and scratches.

Flexible, intelligent systems

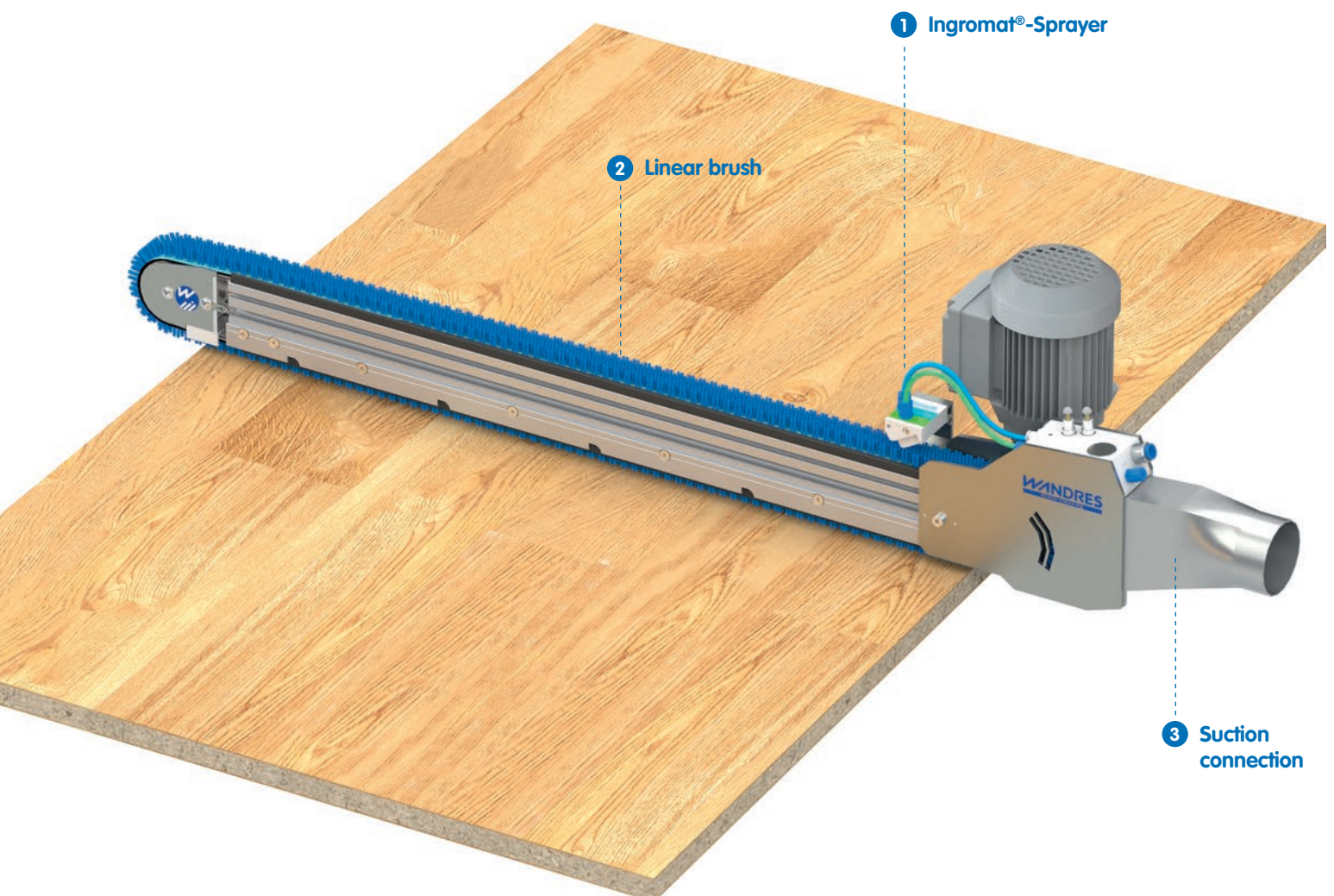
Wandres thinks outside the box

Reliable removal of dust and minute particles from surfaces calls for professional and innovative solutions.

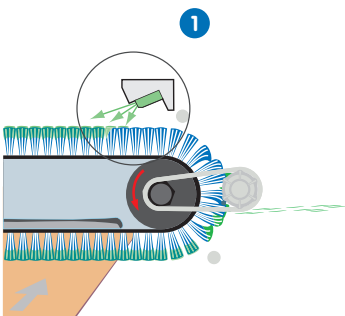
Sword Brush technology

Sword Brushes always wipe transversally across the subject surface. Particles adhere to the brush filaments and are transported towards the suction connections at the deviation of the brush. Here, a roto-rack and compressed air nozzles will remove the particles from the brush so that they are disposed of by the suction system.

The Ingromat® system uses capillary attraction to bind particles to the micro-moistened brush filaments. Thus, even the most tiny dust particles are removed effectively whereas the subject surface itself remains dry during the cleaning process.

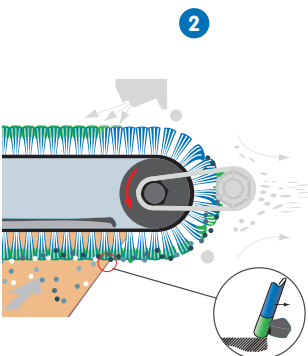


Ingromat® system provides for optimal results



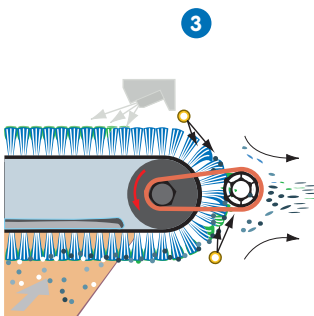
Micro-moistening of linear brush with Ingromat®

The Ingromat® sprayer applies a thin film of Ingromat® antistatic cleaning liquid onto the filament tips.



Cleaning of product surface

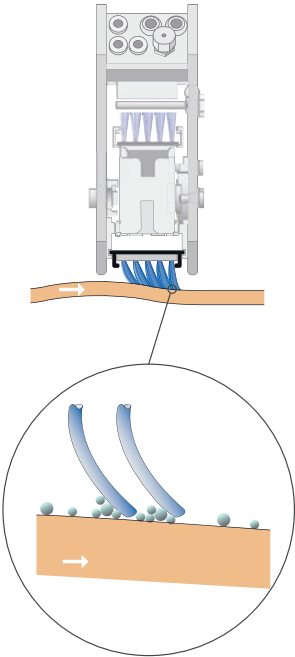
The linear brush wipes transversally across the surface. It binds particles to its micro-moistened filaments transporting them safely towards the suction system.



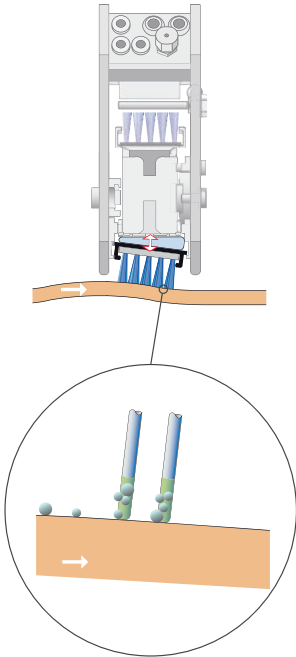
Self-cleaning mechanism of linear brush

A rotating rack and compressed air nozzles provide for a constant cleaning mechanism of the filaments so that they can absorb new particles.

Pressure buffer exerts constant wiping pressure



Without pressure buffer



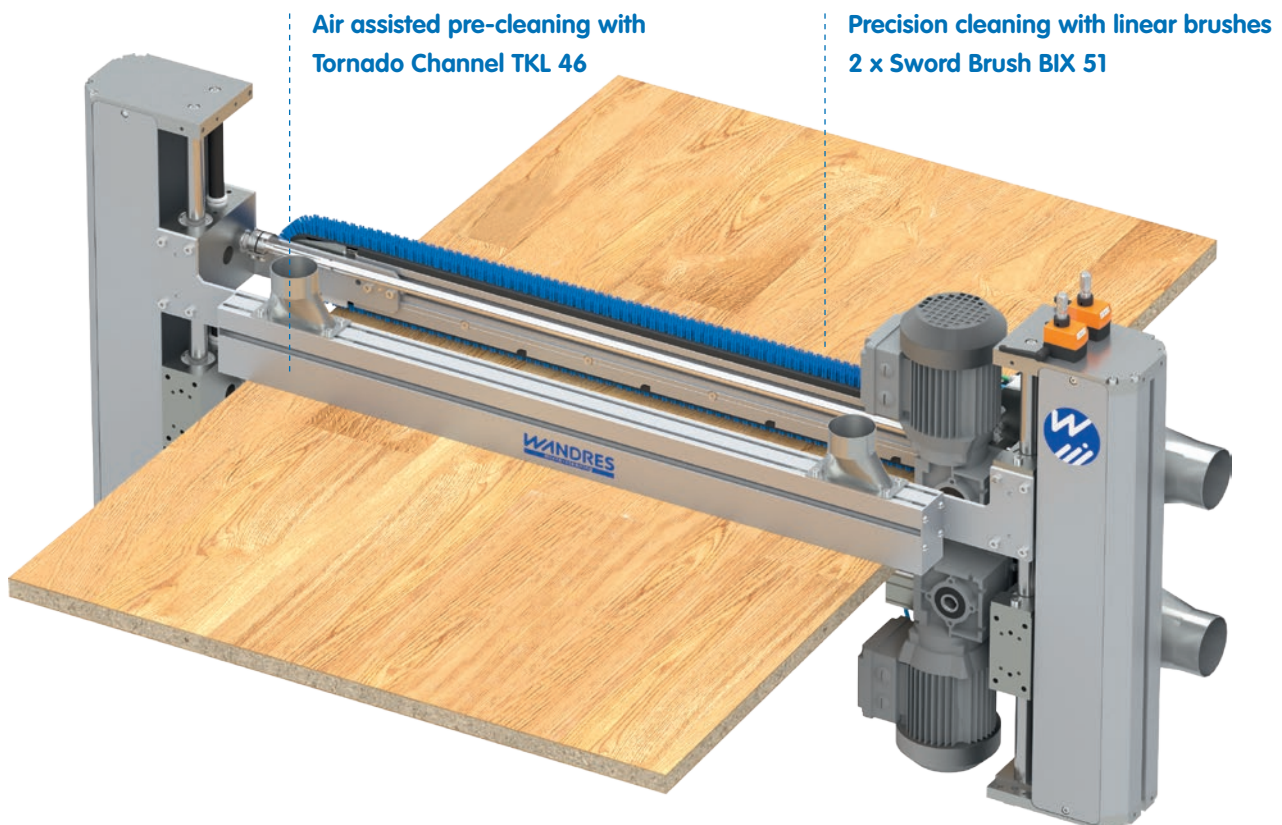
With pressure buffer

Flexible bedding of linear brush

An integrated pressure buffer allows a flexible bedding of the contact area of the linear brush. The buffer is regulated via compressed air and will thus exert a constant wiping pressure onto even slightly uneven surfaces. Filaments thus pass the surface in a vertical position ensuring optimal cleaning results.

Cleaning of furniture panels

The modular system of the Combi Sword Brush Una X provides for entirely clean panels no matter whether these are contaminated with coarse or fine dust particles or whether they have bore holes or surface structures.



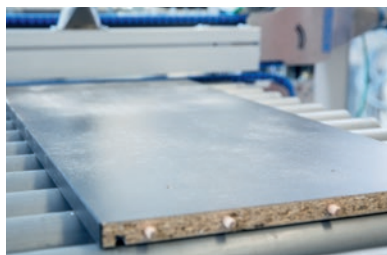
Combi Sword Brush UNA X 121 with TKL 46

The Combi Sword Brush Una X 121 consists of two Sword Brushes to clean the panels from above and from below. They are equipped with a mechanical height adjustment. As an option, they may have an additional electrical and/or pneumatic height adjustment. Coarse dust particles may be eliminated by the Tornado Channel TKL 46 that can be installed at the infeed of the machine.



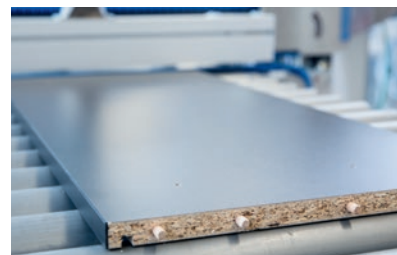
Before cleaning

There are coarse particles and dust particles on the surface.



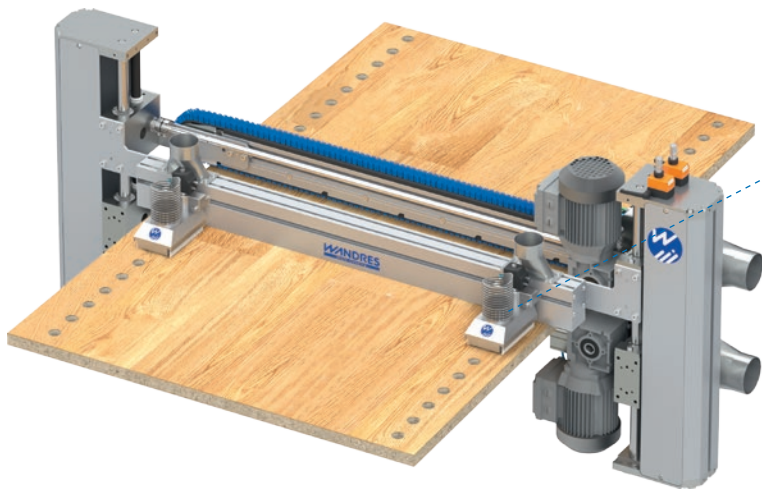
Air assisted pre-cleaning

The TKL 46 eliminates all coarse particles effectively.



Precision cleaning with linear brushes

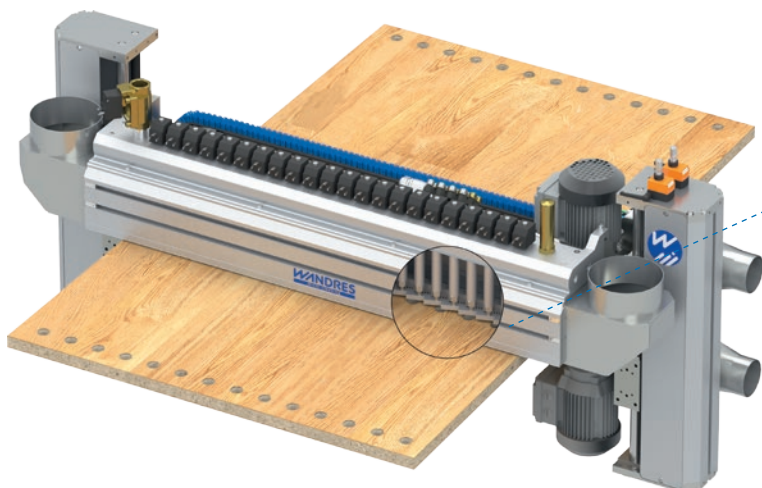
The Sword Brush removes all kinds of fine dust.



Bore hole cleaning device FN 51

Panels with a row of bore holes in transport direction

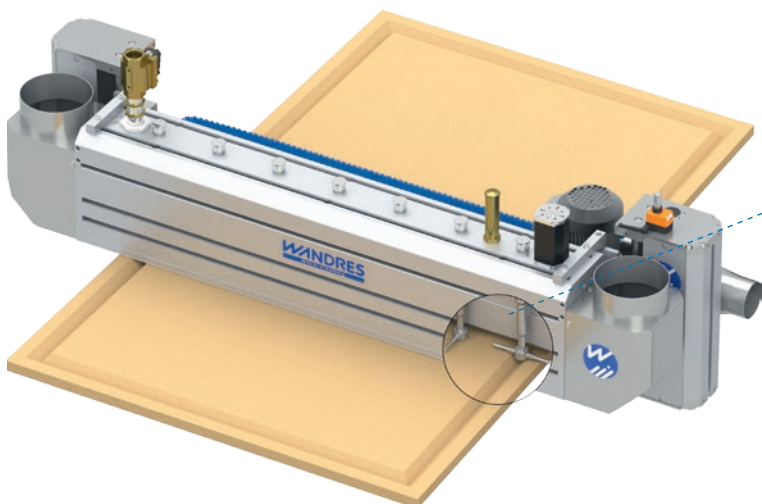
The compact bore hole cleaning device FN 51 is positioned directly above the row of bore holes. A compressed air-driven Power nozzle blows precisely into the bore holes transporting the particles towards the suction system.



Tornado Channel TKF 200

Panels with transverse row of bore holes

The Tornado Channel TKF 200 has compressed air-driven Power nozzles across the whole material width. They may all be activated simultaneously.



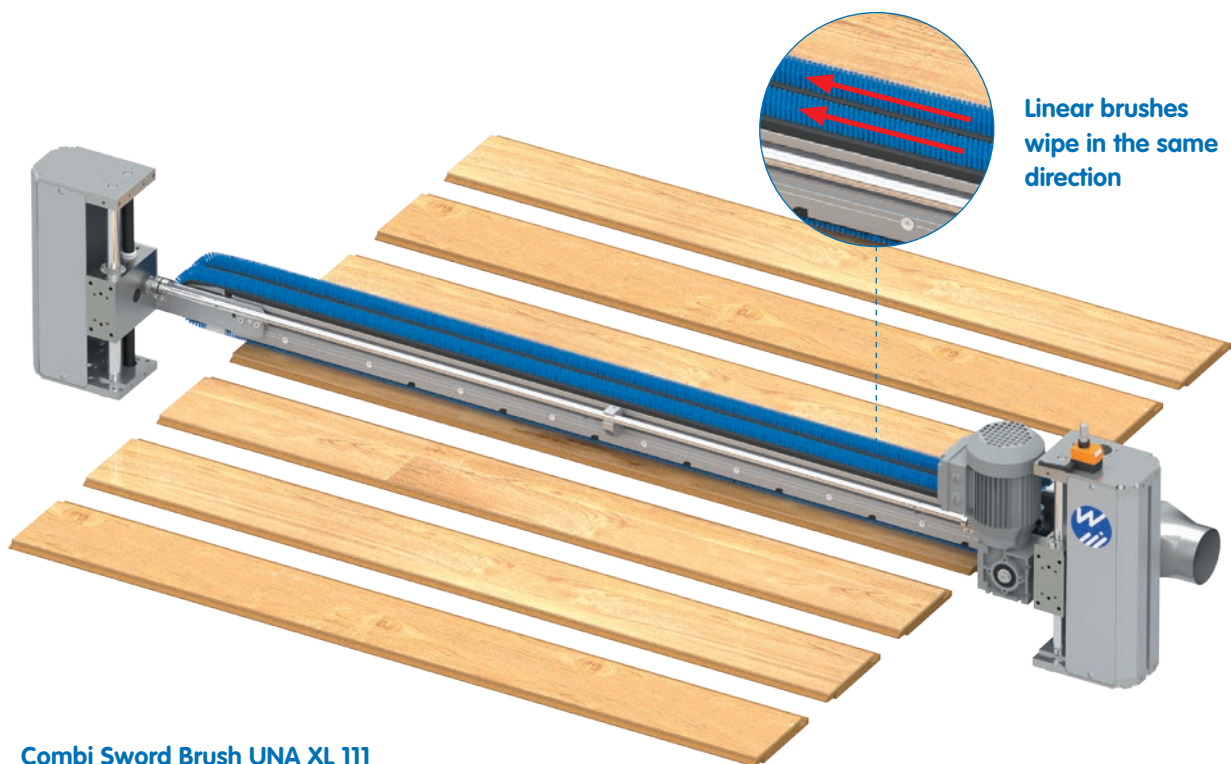
Tornado Channel TKR 200

Profiled or structured panels

The Tornado Channel TKR 200 is equipped with electrical, rotating Tornado nozzles. They use compressed air to remove particles effectively from recesses and cavities.

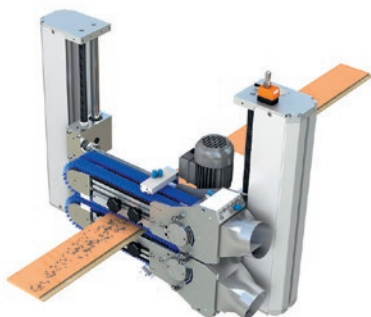
Cleaning of floor laminates

During the production of floor laminates, large amounts of fine dusts occur. These dusts are abrasive and strongly electrostatically charged. The Combi Sword Brush Una XL removes these kinds of dust efficiently and reliably.



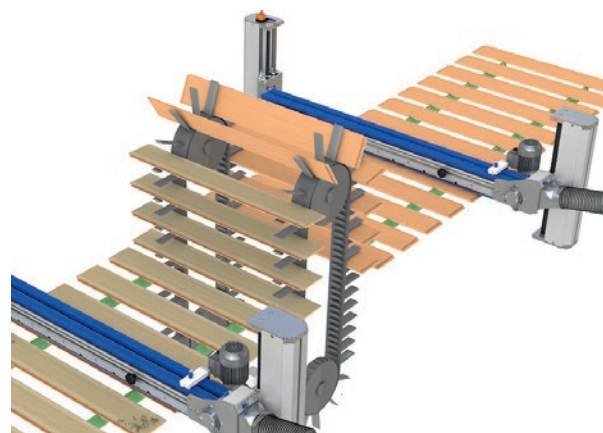
Linear brushes wipe in the same direction

Combi Sword Brush UNA XL 111



Cleaning during longitudinal processing

Floor panels may be cleaned from both sides at high transport speeds.

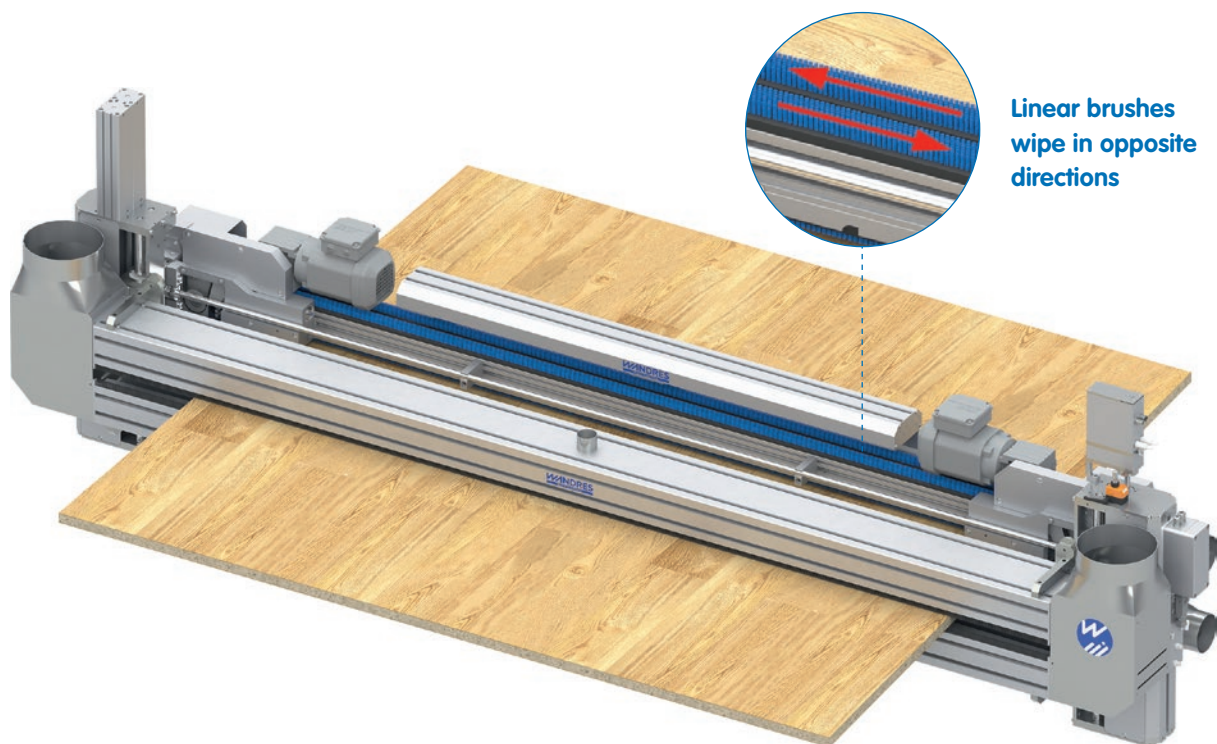


Cleaning during transverse processing

The surfaces of the floor panels are cleaned from one side before and after the panel turner.

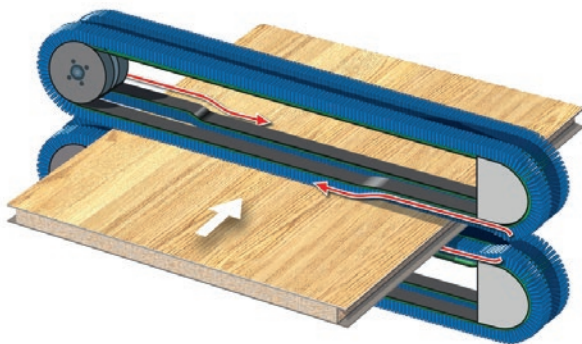
Cleaning of chipboards

Chipboards may be effectively cleaned by a Combi Sword Brush Una RL that has linear brushes that wipe in opposite directions. If you have sharp-edged cover layers, the brushes may be lifted when they pass these edges.



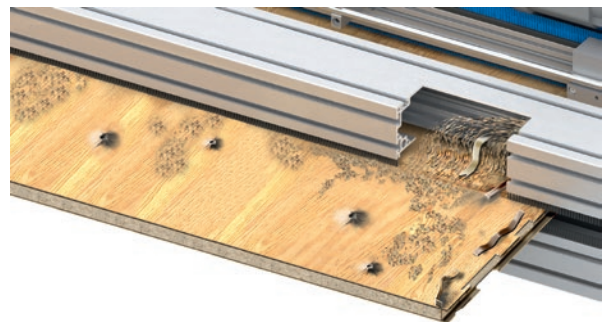
Linear brushes wipe in opposite directions

Combi Sword Brush UNA RL 925



Sharp-edged cover layers

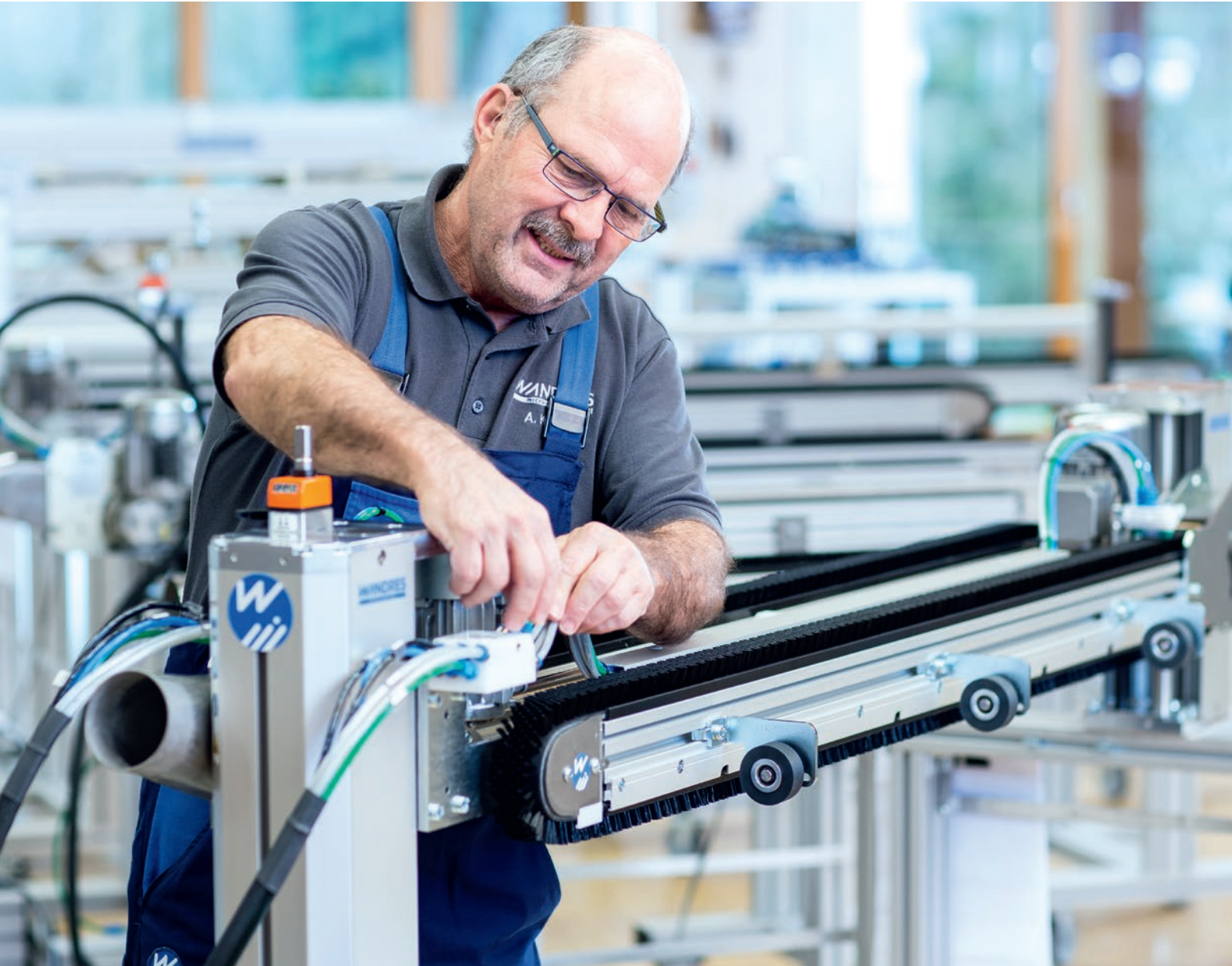
Linear brushes are lifted slightly when they pass the edges of the panel. Thus, protruding cover layers are not damaged and the linear brushes have a longer industrial life.



Cover layer fragments and edge strips

A Tornado Channel TKL 300 is mounted at the infeed to remove large contaminating particles from the upper and the lower surfaces of the panel. It uses a sophisticated air blast system.

Skilled and successful Wandres produces high quality



Product development, 3D-CAD design



Production with modern CNC machines

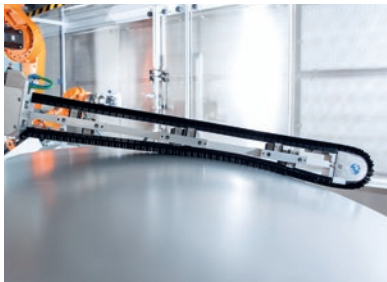


Pre-assembly in Clean Room environment



Final assembly, quality control

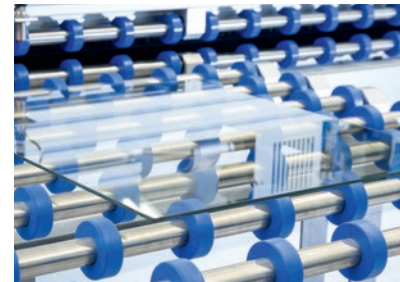
The company Wandres GmbH micro-cleaning has been founded in 1981. Ever since, it has been designing and producing reliable cleaning systems for continuous operations in industrial production environments. The systems require very little maintenance. Among Wandres' customers, there are international corporations as well as sound medium sized companies. They are active in a wide variety of industries such as in the furniture, packing and automobile industries as well as in the paper, printing, glass and electronics industries.



Robot assisted cleaning of three-dimensional surfaces e.g. car bodies.



Cleaning of endless materials e.g. webs, coils, foils.



Cleaning of flat materials e.g. flat glass, blanks, plastic boards.

Quality and efficiency

More than 100 motivated employees, modern machines, a high level of vertical integration and elaborate control mechanisms provide for high quality products. Wandres' products are used for continuous operations and have a long industrial life and efficiency even in very harsh production environments.

Wandres worldwide

- Wandres GmbH micro-cleaning:
Founded in 1981, headquarters in Buchenbach-Wagensteig (Black Forest) near Freiburg in Germany. Research and development, technical centre for cleaning tests, in-house production of all know-how parts, assembly, service, quality control
- Wandres Corporation:
Founded in 1998. Assembly, sales and marketing of Wandres' cleaning systems within the American market
- Wandres Brush-Hitec GmbH:
Founded in 2004, design and manufacturing of linear brushes and Ingromat®
- Wandres China:
2014: Erection of a Wandres subsidiary.



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