

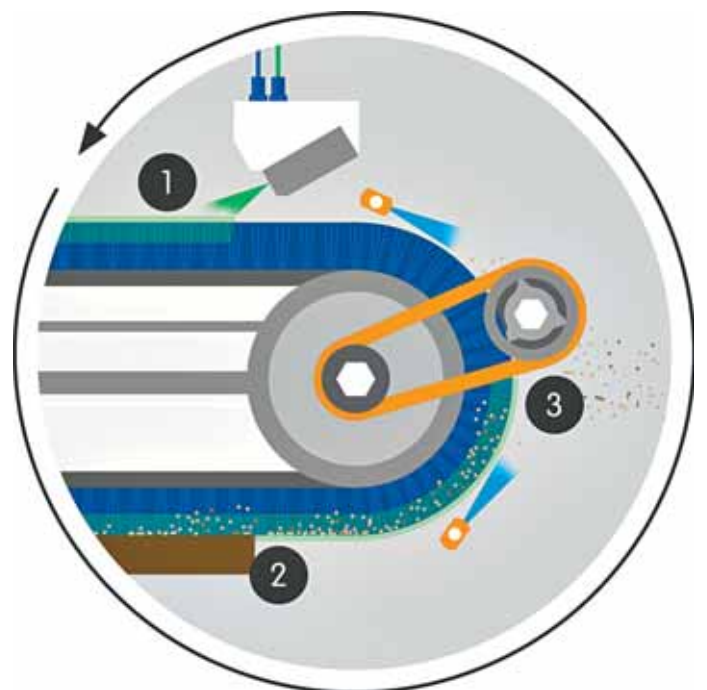


Image: Wandres

The Combi Sword Brush 'Una H-X 423' is integrated into the drilling line. The image depicts two Sword Brushes installed at the outfeed. The Tornado Channel 'TKF' is positioned at the infeed.

Efficient cleaning systems for furniture production

Furniture manufacturing processes inevitably generate high levels of dust and wood chips. The Schmidt Group, leading suppliers of fitted kitchens, deploy cleaning technology from Wandres to ensure further processing flows smoothly and to maintain a clean production environment. The cleaning systems deliver high-performance results even during long periods of operation.



The kitchens and interior furniture solutions designed and manufactured by the Schmidt Group are produced at several sites in France and Germany and marketed under the brand names 'Schmidt' and 'Cuisinella'. Custom-made fittings for all rooms in the house are manufactured to meet the highest quality standards. The manufacturer's plants are designed to carry out batch size 1 production operations that make commercial sense. The manufacturing of individual parts is planned and monitored directly by overall process control. For this to work, however, it is vital that there is no disruption to machine operations and to the transport of the individual pieces. As a consequence, great care is taken during the planning of the lines to ensure a clean process. After every stage in production, for instance after cutting, drilling or edge processing, the workpieces are cleaned before being transported on to the next area of production. Combi Sword Brushes built by Wandres have been configured to meet the specific requirements of each individual process step and installed in several Schmidt Group production facilities during the past few years with impressive results.

Cleaning technology from the Southern Black Forest

Wandres has been developing and producing machines for surface cleaning in industrial production for over forty years. Wandres cleaning systems are individually engineered for different areas of application in the wood and furniture industry. The cleaning machines utilise air technology and brush cleaning technology. The company's space-saving Combi Sword Brushes can be easily integrated into transport systems and feature a manual or electrical height adjustment unit to accommodate panels of varying thickness. Tornado Channels are used to clean grooves and textured surfaces. Any contaminating particles are powerfully removed with the aid of fixed or rotating compressed air nozzles and immediately disposed of via vacuum extraction.

The 'Ingromat' Method consists of three steps: 1. Micro-moistening of the filaments, 2. Cleaning of the surface, 3. Self-cleaning with a rack and compressed air nozzles. The technology guarantees consistent and high-performance cleaning results in continuous operations in industrial production.

Precision cleaning of flat furniture boards and panels is performed by Sword Brushes wiping crosswise to the feed direction across the surface of the substrate. The linear brushes in action here are quite unique. Thanks to in-house manufacturing of the brushes at the site of the company in the Southern Black Forest, high quality standards can be guaranteed for the long term. As a rule, the linear brushes only require replacing at the annual maintenance inspection. The brush filaments are moistened with a minimal amount of 'Ingromat' cleaning agent thereby resulting in an increase in forces of adhesion. Any particles absorbed are detached in a self-cleaning unit by means of a rack and compressed air nozzles and propelled towards a suction system. This procedure has a decisive advantage in industrial applications. As opposed to round brushes, the risk of recontamination of the product surface is zero and consistent and high-performance cleaning results are ensured. A pneumatically regulated pressure buffer compensates for variations in material thickness and ensures that a uniform pressure is exerted onto the surface. 'We have developed solutions for typical cleaning problems in the furniture industry that have already been tried and tested in years of use,' explains Martin Tritschler, Head of Sales at Wandres. 'In addition, at our Technology Centre we can run tests at varying speeds to trial cleaning devices that combine air-assisted and brush cleaning technology. In this way our clients can convince themselves of the efficacy of our cleaning systems in advance.'

Cleaning after drilling

The production facilities of the Schmidt Group have several drilling lines at their disposal which are equipped with state-of-the-art CNC machinery to drill the through and blind holes into furniture components as required. Despite in-built vacuum extraction devices in the machining centres, dust and wood chips remain stuck in the drill holes or cling to the surface. Manual cleaning would be extremely time consuming and disrupt the automated production process. Any contamination left on the furniture parts at assembly would prove problematic. Particles stuck in drill holes during dowelling can mean that dowel joints fail to connect properly or even cause splitting.

The Combi Sword Brush Una H-X 423 is deployed in the drilling lines to solve these issues. The Tornado Channel TKF removes contaminating particles from drill holes at the infeed. At the outfeed,



surfaces are cleaned on both sides by two Sword Brushes. Due to a narrow footprint, the Combi Sword Brush can be integrated problem-free between the machining centre and the vacuum handling equipment. Thanks to the automated cleaning

The high-end kitchens manufactured by the Schmidt Group are made-to-measure at the company's plant in France.

After edge processing the furniture panels are cleaned on both sides by the Combi Sword Brush Una X 121.

process, further processing can proceed without disruption and no particles are dragged along the line during transport by vacuum grippers.

Cleaning after edge processing

Edge processing is the final production step before the furniture parts are transferred to the warehouse. In order to achieve durable and high-quality edge banding, PUR adhesives which have a high resistance to moisture are used for bonding the edge bands to the panel side.

Up to four edges can, according to requirements, be processed in the complex production line which takes up a substantial part of the production hall at the plant in Selestat.

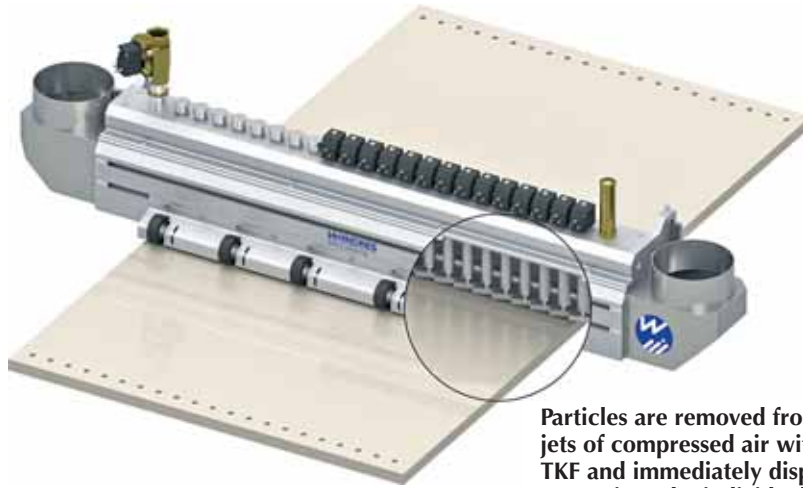
The panels move through several transport systems and processing machines gathering dust and particles as they do so. During stacking such contamination can cause damage to the surfaces. To address this, the Combi Sword Brush Una X 121 is



installed at the end of the production line. Two Sword Brushes clean the furniture parts on both sides before they are sorted and stored in the warehouse. In this way damage during stacking and transport is avoided. The warehouse remains permanently clean and perfectly clean parts are ready and waiting for assembly.

Stable production processes in continuous operations

Today there are over 20 cleaning systems built by Wandres in action in the Schmidt Group plants. Cleaning after cutting, after drilling and following edge banding paves the way for stable and financially viable processes in continuous operations. Given that the



Particles are removed from holes and grooves by jets of compressed air within the Tornado Channel TKF and immediately disposed of by vacuum extraction. The individual nozzles are fitted with manual or electrical valves enabling each valve to be activated separately thereby minimising the consumption of compressed air.

kitchens manufactured by the Schmidt Group have seen a massive hike in sales, the production lines are constantly undergoing modernisation and extension. The cleaning aspect is

already factored in during the planning of new installations and orders placed for the appropriate Combi Sword Brushes from Wandres. On-site employees profit from a clean production

environment and customers are delighted when the kitchen of their dreams can be fitted with spotlessly clean furniture parts of the highest quality.