



Images: Wandres GmbH micro-cleaning

► Karl Fischer from TEAMwork and Toni Erhard from Wandres in front of the CNC machining centre with integrated cleaning unit.

Clean CNC processing

Teamwork for the automated cleaning of acoustic panels

During the manufacture of acoustic panels, hole or slot perforations are cut into boards using modern CNC machines. The machines are precise and deliver unrivalled accuracy. However, chips and dust clog up the micro-perforations and need to be removed before the panels are delivered and installed. Now the Austrian company TEAMwork is working together with Wandres micro-cleaning which is based in Stegen, Germany. Together they have developed an automated cleaning solution that cleans these panels effectively.

Acoustic panels absorb sound and are often used in public spaces to reduce excessive sound reverberation and improve the acoustic quality of the space. The panels are installed on the walls or suspended from the

ceiling. At the same time as achieving the desired acoustic effect, the panels enhance the space with an aesthetic design. The company TEAMwork GmbH in Linz, a wood and plastics processing business,

produces grooved and perforated panel systems. You can choose different perforation patterns or request a custom design to complement a wide range of room types. The panels can be found in conference rooms, concert halls or music venues, education facilities and recording studios.

Effective cleaning technology

The specific distribution pattern of the perforations in the acoustic panels are designed to optimally enhance sound absorption performance. The holes or grooves are drilled or milled into cut-to-size panels using modern CNC machines. Fine dust and shavings are left behind in the recesses and, as manual cleaning is time-consuming and disrupts the production process, an alternative, automated solution is required.

Wandres GmbH micro-cleaning, specialists in cleaning technology, offer exactly the right cleaning solution. In addition to the Sword Brushes (a brand recognised globally) the company from the Southern Black Forest has developed a cleaning machine that utilises air technology and that has proved the perfect solution for this application. The Tornado Channel TKF is equipped with several Power Nozzles across the cleaning width that powerfully remove any dust stuck in the recesses with jets of compressed air. The individual Power Nozzles are fitted with magnetic valves. Each valve can

be activated separately. This means critical areas can be cleaned appropriately and the use of compressed air kept to a minimum. The particles removed are disposed of within the channel by means of vacuum extraction and cannot escape into the production environment.

Direct integration at the machining centre

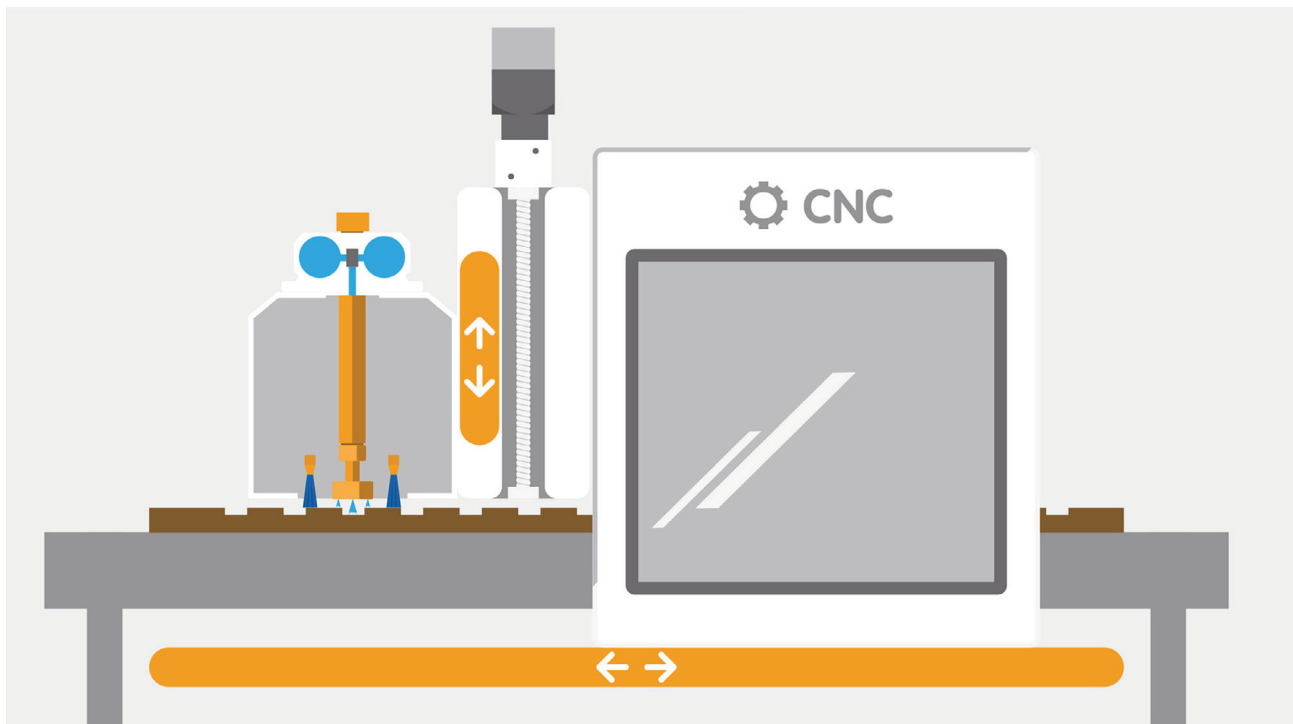
The extremely high-performance cleaning results of the Tornado Channel TKF have already been tested in close to real-world conditions in the Technology Centre at Wandres HQ. As a rule, the slender cleaning systems of the manufacturer can be integrated together with an adjustment unit into existing conveying systems.

TEAMwork has discovered a further option by connecting the cleaning module directly to a new CNC machine. The adjustment unit of the cleaning module is mounted on the adjustable upper section of the machining centre. The panels remain in a fixed position during both CNC machining and during the cleaning process. Prior to the cleaning procedure, the Tornado Channel is moved into the correct position for the task with the aid of the electrical adjustment unit. During the cleaning process the horizontal position is adjusted via the machining centre. Afterwards the cleaning machine is returned to a higher position and the panel can be removed, spotlessly clean and with milling complete.



Images: TEAMwork GmbH

► Acoustic elements by TEAMwork combine sound absorption with elegant design



► The cleaning machine and the CNC machine are connected by a vertical adjustment unit. The horizontal axis of the CNC machine is used during the cleaning process. (Image is not drawn to scale)

When the cleaning unit is not in use, it can also be deployed to clean the machine tables and the spoil board. As a result, manual cleaning work is no longer required and the vacuum handling equipment remains trouble-free long-term.

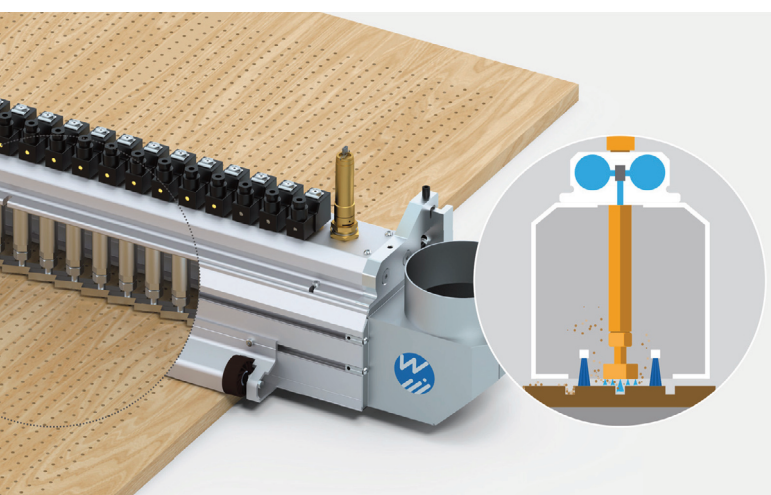
Working together at all levels

The integration of the Wandres cleaning unit into the machining centre was realised thanks to the partnership between Wandres and the Austrian company Handl, based in Wels. The existing vacuum extraction system of the CNC machine is used and the entire automated process is connected to the overall process control system. The system is straightforward

to operate as well as reliable which saves a great deal of time in the long run.

The CNC machine and the cleaning module require a very limited amount of space so that the whole installation is extremely compact. This avoids any transfer of dust and chips when the panels are removed after milling. Karl Fischer from TEAMwork is very impressed by the solution jointly achieved. 'Combined with Wandres cleaning technology, the machining centre has been upgraded to a comprehensive solution that saves us a lot of time.'

Toni Erhard, Senior Manager for Technical Sales at Wandres emphasises the exemplary nature of the project: 'Modern machining centres and nesting machines generate enormous amounts of dust and chips and these can severely compromise the production process. If the manufacturer takes this into consideration when planning new installations, huge cost-savings can be made in the long term. A direct connection between CNC and the Wandres cleaning machine is a very efficient solution for a wide range of applications. Many manufacturers are not yet aware of this possibility.' In the meantime the new combination of CNC machine and cleaning technology has come to the attention of other users and is currently being realised in other projects. ■



► The Wandres Tornado Channel TKF 200 cleans acoustic panels



Wandres GmbH micro-cleaning
www.wandres.com