Extraction safety from Al-Ko

Matthias Schalast talks about how Al-Ko machines exceed even the toughest new dust extraction regulations.


Matthias Schalast

Since it opened its first extraction technology department in 1988, Al-Ko has been committed to manufacturing dust extraction units that meet the most challenging industry requirements but with workplace exposure limits for wood dust changing in the UK from January 2020, what does this mean for the German extraction company? We put this question and more to Matthias Schalast, Area Sales Manager at Al-Ko Therm GmbH:

How are dust exposure regulations changing in the UK and is Al-Ko prepared for these changes?

"Next year, the UK is set to change its workplace exposure limits for wood dust. They currently stand at 5mg/m³ but from January 2020, this is set to reduce to 3mg/m³ and by 2024, this figure is predicted to drop further to just 2mg/m³. This is a big step forward for health and safety in the workplace but we design our dust extraction systems to coincide with EN and DIN standards which already work to considerably less exposure limits than this. For over 10 years, German law has stated that manufacturers must have a maximum exposure rate of 2 mg/m³ in the workplace and we've continued to focus our research and development in this area to create a complete dust extraction offering that falls well below this threshold.

"Al-Ko's Power Unit range is a perfect example of this. The mobile range has been designed and tested in accordance with the European Norm EN 16770, a regulation that was updated in December 2018 to highlight new risks associated with modern manufacturing techniques, machinery and internal extraction systems that boast a volume flow of up to 10,000m³/h. We created a range that had a guaranteed residual dust content of less than 0.1mg/m³, which means the return air is 20 times cleaner than the required value UK manufacturers need to meet by 2024.

"We've been able to achieve this impressive figure thanks to the design of the fan, which is sat behind the filter. In short, the fan creates a vacuum which sucks the dust into the filter house, which in turn separates the dust on the filter surface. We use an extremely fine filter material with a low porosity – it's made from Filter Class M which has a passage level of less than 0.1 %, and

The AL-KO Power Unit 300P-BP


All AL-KO's machines feature an outer shell that is pressure shock resistant to 200 mbar m/s as standard

guarantees this extremely low residual dust level. This means, when UK manufacturers buy an extraction system from Al-Ko, they are not only using a system that meets 2020's new regulations, they are future-proofing the business for the foreseeable."

How is Al-Ko's dust extraction range tested to stay in-line with the latest industry health and safety laws?

"All Al-Ko dust extraction units are manufactured in accordance with European regulations, national standards and CE requirements. They are also built and certified according to the latest ATEX guidelines. We have our own testing facilities at our head quarters in Germany, which allows us to test technical values like flow, velocity, the machines capabilities under pressure and the resistance of the unit's housing. Our machines are also independently tested by the trade association every five years and go through intermediate testing at our factory every 2.5 years. This has led us to continually develop our range and tackle the major risks of extraction head on."

What are the risks associated with wood dust and how can using an AL-KO unit reduce this ongoing threat in the workplace?

"The main risk when extracting wood dust is the threat of explosions and fire. This fact has been well documented over the years and as such, wood dust is classified in dust explosion class ST1. To tackle this issue, all our machines feature an outer shell that is pressure shock resistant to 200mbar m/s as standard. This means our machines are able to extract all substances with dust explosion class ST1.

"In addition to this, models in our Power Unit range from 250 upwards are equipped with a thermal sensor, which is automatically triggered at 70°C. This shuts down the fan, stops all filter cleaning and triggers the fire extinguishing unit if a risk of fire is detected. Larger units are also equipped with a tank that is filled with water and a special antifreeze fluid as standard to further reduce the risk.

"Regulations also restrict pneumatic cleaning during operation due to explosion and fire risks. In businesses where filter cleaning is required during the operation of the system, Al-Ko offers an effective ignition protection system that can be installed in the suction pipe. Features such as these offer ongoing monitoring of the extraction system and have been designed to prevent the risk of fire and explosions in the workplace without restricting performance."

What new health and safety features can be integrated into AL-KO's dust extraction systems and how might they benefit the operator?

"It's our duty to eliminate operator risk and fulfil the requirements set by the industry. Regulations don't tend to change over night but we still have to commit to ongoing research to guarantee the quality and safety of our extraction units remains unchallenged. Due to the growing demand of larger extraction units in the furniture manufacturing sector, the risk of fires and explosions have never been higher. The regulations have been adjusted in accordance with this and as a result, our larger machines come with an automatic extinguishing system as standard and our smaller units, even though it's not mandatory, come with a built-in extinguisher if required.

"New developments also include our Dust Compartment, which was launched at Ligna 2019. It reduces dust exposure when it comes to emptying the dust from inside the housing, whilst our Filling Level Sensor triggers the unit to switch off automatically if the maximum filling level in the chip container

Clockwise from left:

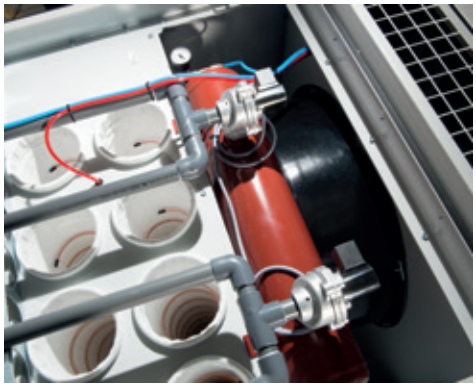
AL-KO Power Unit 350+

The integrated fire extinguisher

The Filling Level Sensor triggers the unit to switch off automatically if the maximum filling level in the chip container is reached, preventing a blockage inside the filter housing.

Al-Ko's high-performance JET filter

The Dust Compartment reduces dust exposure when it comes to emptying the dust from inside the housing



is reached, preventing a blockage inside the filter housing.

"Our dust extraction systems also come with a Frequency Converter to save energy. This is particular important when manufacturers are using a bigger extraction unit but don't require maximum performance at all times. Due to the Frequency Converter, the fan only produces the required flow which saves energy, protects the environment and increases the service life and overall health of the filter due to optimised suction performance."

What can we expect from Al-Ko in the next 12 months in terms of design and safety?

"At Al-Ko, we go above and beyond to make sure our range surpasses health and safety requirements set by all major standard organisations and we will continue to invest in our manufacturing and testing facilities. Going forward, we will be concentrating on our unit's noise levels. Our units are already among the quietest on the market with as little as 69 dB(A) – well below industry's recommended noise limits – but we're looking at ways to improve on this even further.

"We're also looking at ways to make handling even easier, including the ongoing development of our gas spring covers and additional design features that will make one-man maintenance on larger models possible.

"As the industry pushes for more digitalisation, we're also developing our control unit so our customers can benefit from a simple way to continually monitor ongoing activities and ensure the highest levels of safety are adhered to at all times.

"European regulations and national regulations from professional associations provide manufacturers of dust extraction systems with guidelines for the safe construction of these machines. They enable our customers to make a fair comparison of the systems on the market, while ensuring the dismantling of trade barriers. The standards also serve to define test principles for dust extractors. Our ongoing commitment to legislation such as this, allows us to offer our customers the very best German-engineered dust extraction solutions that will stand the test of time and the ongoing changes to workplace law in Europe and the UK."

TM Machinery is the exclusive distributor of Al-Ko dust extraction systems in the UK. For more information please visit **www.tmmachinery.co.uk** or call 0116 271 7155. For the latest news, follow TM Machinery on Twitter **@TM_Machinery** or search for **TM Machinery** on LinkedIn.