Breathe freely in polluted air

SEKA protective ventilation systems
for construction machines and
technical installations

SEKA
Breathing air

We have made it our mission to give your employees the best possible protection against health hazards, thus minimising the entrepreneurial risks for your business.

Our leading protective ventilation systems provide controlled and reliable protection against dusts, poisons and foul odours, making it safe to work in some of the most unpleasant and dangerous places in the world.

Welcome to SEKA

Stefan Müller

Whenever the air is too thick to breathe

SEKA has been committed to respiratory protection for more than a quarter of a century now. A talent for inventiveness and innovative solutions have made us a leading specialist in all aspects of protective ventilation. Numerous patented technologies give us a pre-eminent position on the market.

Our core focus is on the driver's cabin of construction machines and other industrial equipment, where we offer tailor-made solutions for a working environment that is free of dust, pollutants and foul odours.

Success stories that get around

With more than 100 vehicles, SEKA has equipped the largest Caterpillar fleet in Europe with protective ventilation systems. Europe's largest landfill also relies on our technologies, as does the biggest specialist in asbestos disposal in Germany. SEKA protective ventilation systems are found in everything from the biggest construction machines to mini-excavators.

Mature and adaptable

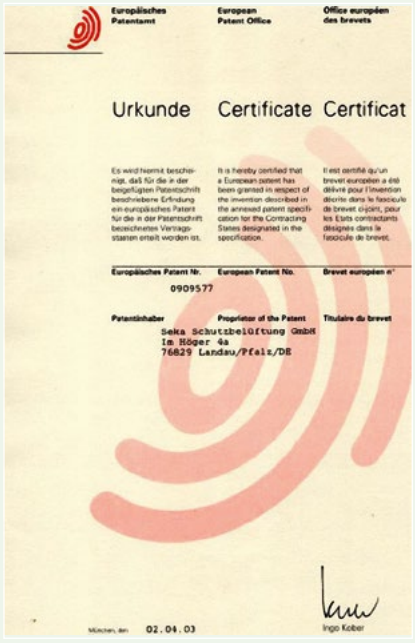
With SEKA, you can rely on technologies tailored to real-life requirements and on many years of experience. Our systems are modular in design and can be easily adapted to changing environmental conditions at any time. Simply exchange the filter and you are equipped for a different application. With no time-consuming conversions and costly retrofits. The type approval process for our systems means that you as an employer are always on the safe side.

Complex technology made easy

The hallmarks of SEKA protective ventilation systems are easy handling and uncompromising long-term quality. They not only have a robust design made to cope with the harsh everyday conditions on site, they are also very easy to operate.

Cabin pressure and filter loads are monitored automatically. The control unit is self-explanatory and deliberately kept down to just a few control elements. Malfunctions are shown on the display.

Type approved: Maximum security for you as an employer



Only at SEKA: Internationally patented innovations to protect your employees

Longevity by design

A SEKA protective ventilation system is designed for continuous operation under harsh operating conditions. The housing is made of 24 mm thick stainless steel. All other components are also made of corrosion-resistant materials. The blowers are equipped with brushless motors, which do not wear and require no maintenance.

Service without delay

There is nothing more useless than an idle construction machine. That's why SEKA ensures that your machine is up and running again as soon as possible. In the event that maintenance or repair work is required, simply request the necessary components or a replacement system. We deliver in no time at all and take the defective components with us when we leave, ensuring accelerated work processes on site and guaranteeing the minimum of downtime.

Rental or purchase

Not every site is associated with high levels of dust and pollutants. If you need a protective ventilation system for specific projects, it makes sense to rent it only when needed. SEKA offers flexible packages, from the compressor station to the complete compressed air system, avoiding investment costs and improving your flexibility.

With its Click & Run system, SEKA offers the ideal technical conditions for the flexible use of a system on multiple machines.

Just talk to us. We will be pleased to advise you and find the ideal solution for your needs.

SEKA protective ventilation

Controlled breathing air for contaminated environments.

A protective ventilation system fulfils the requirements for a safe workplace that does not pose a health hazard. The SEKA protective ventilation system SBA 80 is suitable for construction machines and other technical equipment operating in environments with high levels of harmful substances. It ensures the health of operators by supplying the driver's cabin with clean air that poses no risk to health.

- Flexible filter technology for every requirement
- Modular design for fast installation and maintenance
- Intuitive operation
- Automatic pressure control
- Additional circulating air filtration system

SBA 80:
Flexible and future-proof

The SEKA SBA 80 protective ventilation system is strictly modular in design and can be adapted to the most diverse requirements. It is a dust extraction system in its simplest form and can be upgraded to a fully-fledged protective ventilation system to DGUV 201-004 specifications (formerly BGI581).

The key to this flexibility is a system that allows over 100 different filter combinations, giving you the ability to adapt the system to changing conditions by simply changing the filter directly on site.

Fan control:
Automatic constant cabin pressure

An efficient protective ventilation system is based on the principle of overpressure. To ensure that no contaminated outside air can penetrate through any leaks, the SBA 80 protective ventilation system generates overpressure in the cabin of the construction machine. The system features a fan with a filter positioned on the pressure side of the system. Its design ensures that a constant cabin pressure of 130 Pa is guaranteed. According to DGUV 201-004, a pressure between 100 and 300 Pa is required.

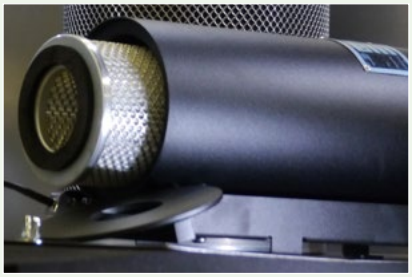
Automatic:
Comfort with extra safety

Fan control is dependent on the cabin pressure and also compensates for any leaks in the outer wall of the cabin, ensuring reliable continuous operation.

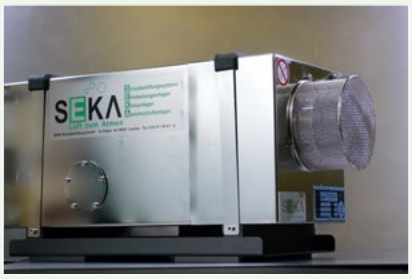
Operating costs: Economic efficiency as a basic principle

Occupational health and safety is a requirement. Low operating costs are a must. The SEKA protective ventilation system squares these two objectives.

Self-explanatory control unit



Air circulation system in the cabin



High-quality stainless steel housing

Automatic fan control ensures that only as much air flows through the filter as is required for the optimum cabinet pressure. This increases the service life of the filter and allows the use of particularly compact and cost-effective activated carbon filters.

A maintenance-free cyclone filter with highly effective dust separation eliminates the need for an additional coarse dust filter, while regenerative membrane filters and a low-wear blower design ensure additional cost benefits.

Efficiency: Additional circulating air filtration system

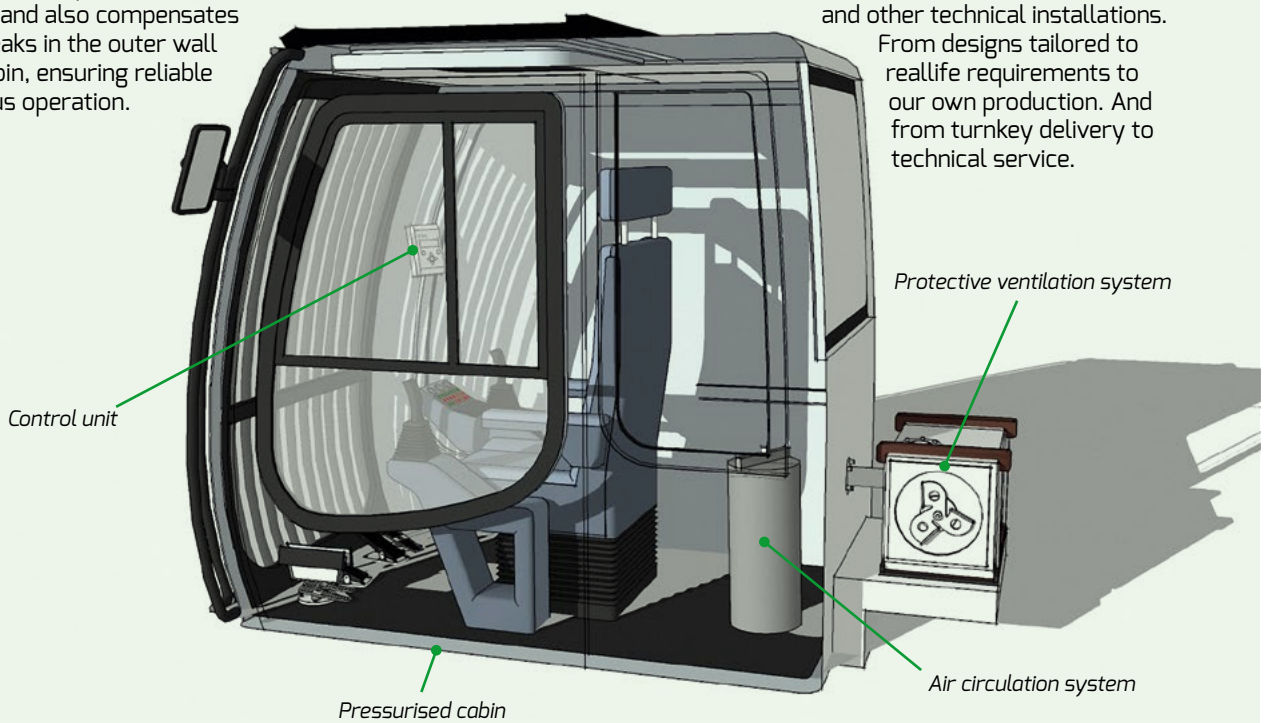
With an additional circulating air filtration system located within the cabin, the SEKA protective ventilation system ensures maximum efficiency. This guarantees a high air exchange rate and the best possible protection of the operator's health.

Maintenance of value and protection of the construction machine

An important additional benefit is that the dust-free cabin not only protects the machine operator, but also the cabin's sensitive electronics.
In addition to downtime, this also prevents high repair costs.

Ready to run: A one-stop source for all your requirements

SEKA offers comprehensive expertise in all aspects of the protective ventilation of construction machines and other technical installations. From designs tailored to reallife requirements to our own production. And from turnkey delivery to technical service.



SEKA DUST EXTRACTION SYSTEMS

Efficient technology against polluted air

While dust is a health hazard, it is also a constant companion in many workplaces. From quarries to tunnel construction, from steel mills to demolition work, the SEKA EBA 80 dust extraction system ensures that the workplace is free of dust.

Breathing air without dust

Click & Run: Quick exchange instead of costly repair

Easy to upgrade to SEKA protective ventilation

Dust extraction: Filter for better breathing air

A dust extraction system guides the outside air through a filter system and blows the dust-free air into the cabin of a construction machine. In contrast to a protective ventilation system, it does not filter either noxious fumes or toxic gases.
There is also no fully sealed cabin and no circulating air filtration system.

Modularity: Upgrade for increased requirements

All SEKA protective ventilation systems are modular in design and based on the same components and technologies. This means that every dust extraction system can be easily upgraded to a protective ventilation system, requiring only sealing of the cabin and the installation of a circulating air filtration system with a control unit.

Our approach to service

Exchange instead of repair

Plug and play: fast, tool-free exchange of equipment and filters for safe and efficient work.

In the event of the failure of a protective ventilation system, we ensure that a quick solution is found immediately. Just give us a call and we will deliver a replacement for the defective component directly to your site.
We take the defective component with us when we leave and the job is done. No hassle. No paperwork. No long downtimes.

Click & Run: As simple as it sounds

All SEKA protective ventilation systems are strictly modular in design. The individual components are also equipped with plugs and quick-release fasteners so that they can be exchanged in virtually no time. Simply remove the air hose, pull the plug, release the clamping bracket, replace, done.

Hotline: Just give us a call and we'll be right there

With SEKA, technical support is only a call away. A well-established logistics system guarantees fast delivery of spare parts, reducing downtime to a minimum.

SEKA compressed air systems

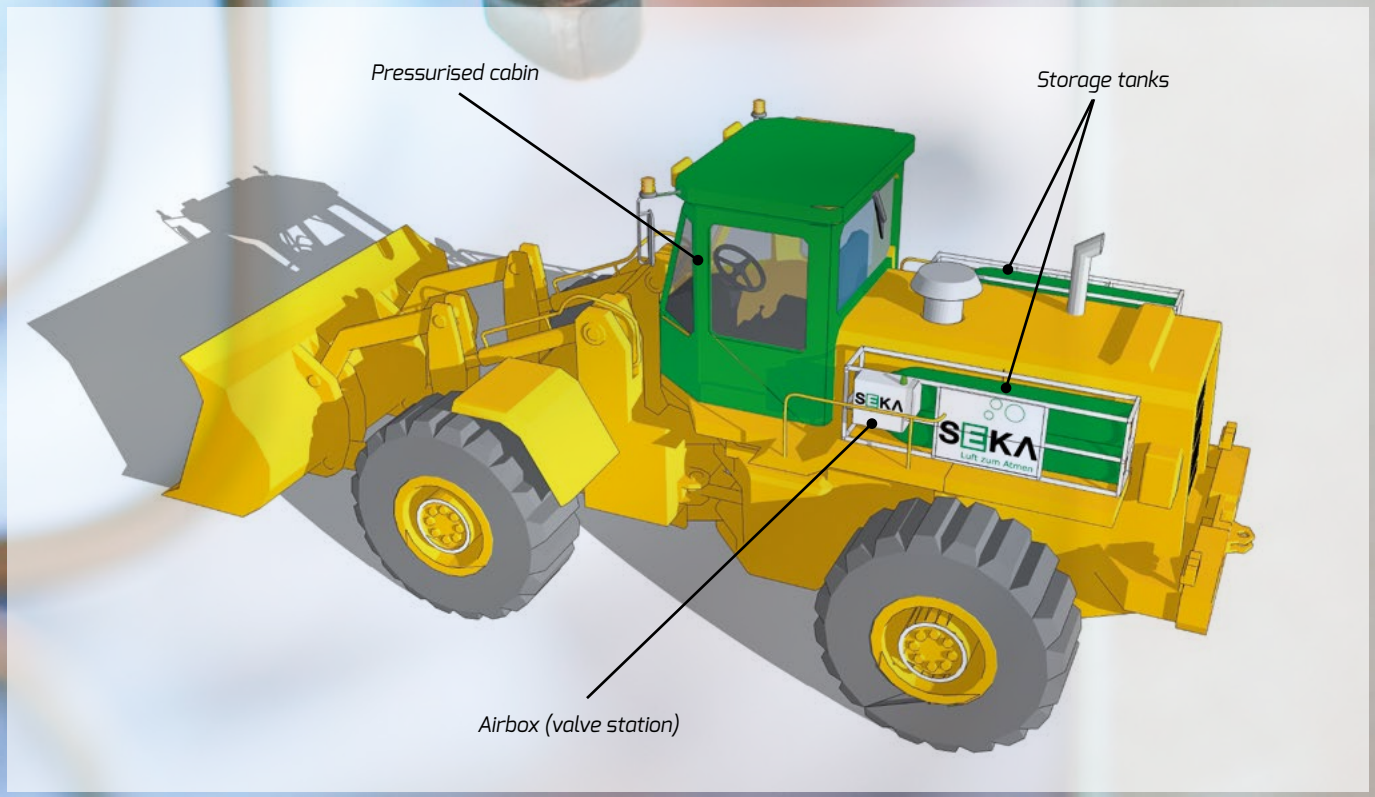
Work safely in hostile environments

Airbox. The system control centre

Compressed air frame

Individual design

The SEKA compressed air system not only features a whole range of patented technologies, but also offers solutions tailored to real-life requirements that deliver tangible benefits. The modular design ensures increased efficiency and extended availability. This sophisticated approach offers a level of safety that meets international standards.



Mobile compressed air supply in compact form

- SEKA Adaptive Air Control System: 100% longer availability
- Modular design for fast installation and maintenance
- SEKA Airbox: Control centre available immediately
- Compact compressor station for easy transport
- Approved by German Construction Trade Association (BG Bau)

Compressed air:
Safe breathing air from the tank

A compressed air system for a construction machine works in the same way as diving equipment. The driver's cabin is completely isolated from the surrounding atmosphere and supplied with breathing air from compressed air tanks, making it possible to work in hostile environments.

In most cases, four compressed air tanks with a volume of 50 litres are installed. The Airbox includes all valves required to reduce the compressed air from approximately 300 bar to a level close to ambient pressure.

Adaptive air control:
Operating time more than doubled

Adaptive Air Control is a patented SEKA technology. An intelligent control unit measures multiple parameters inside the cabin and supplies the space with exactly the amount of air required to maintain optimum air quality.

ADLA on a control vehicle

This allows us to almost double availability, which means that instead of a maximum of 4 hours per compressed air refill, continuous operation for up to 8.5 hours is possible. And without compromising the air quality in the cabin.

Airbox:
Technology in compressed form

The Airbox is an essential component of the SEKA compressed air system. It combines all sensors, valves, shut-off devices and the main components of the electronic control system into a compact unit. The Airbox is shipped as a fully functional component.

Documentation:
Proven functional safety

With a compressed air system, there can be no compromise. That is why we subject every Airbox to a comprehensive programme of tests on a specially developed test bench that records more than 20 measuring points and documents them in a quality log.

Economic efficiency:
Lower costs through better ideas

The SEKA Adaptive Air Control System guarantees savings across the board. Since the compressed air tanks have to be filled less frequently, the compressor is also operated less frequently. The air flow rate is lower, so the number of filter sets is reduced significantly.

Compressor station for multiple systems

All of this ensures minimum downtime and reduces operating costs for energy, maintenance and repairs.

Modularity:
Less effort on principle

The SEKA compressed air system is strictly modular in design. It consists of only four modules: control unit, compressed air tank assembly, Airbox and circulating air filtration system. This not only speeds up installation, it also enables faster technical service and simplifies the replacement of the modules.

Compressor:
Mobile compressed air in compact format

SEKA compressors can supply up to four construction machines. They are delivered ready to run for immediate operation on site.

With their extremely compact design, they have a footprint of around only 4 square meters and a weight of 1.5 t, and they can also be delivered by any shipping company. This translates into low investment costs and attractive operating costs.

The new, compact compressor station

Type approval:
Patented safety to recognized standards

Compressed air systems are operated at a pressure of 300 bar and must meet the highest safety requirements. Even improper use should not endanger the operator or machine. The latest generation of SEKA mechanical equipment is designed for maximum safety. Its electronic control system complies with EN 13849 (standard for the safety of machine control systems).

SEKA FILTER TECHNOLOGY:

Added safety-due to pressurised protective ventilation

- Pressurised protective ventilation for more safety
- Air circulation system for additional air purification in the cabin
- Simple plug-in system for individual filter combinations
- Easy tool-free filter exchange
- Biggest activated carbon filter on the market for long service life

In SEKA systems, the fan is located in front of the filter, directly at the air inlet. In front of the filter are an inlet grille and a maintenance-free mechanical cyclone dust collector. This design principle means that the entire system is pressurised. The overpressure is generated before the filter and includes the entire filter housing all the way to the cabin, which means that it is impossible for air from the outside to enter the system. This is the state-of-the-art design principle for ABC systems used by the military. SEKA also makes this technology available for non-military applications.

With its integrated air circulation system, SEKA goes one step further, also filtering out pollutants from the air that have entered the cabin while the operator was getting in or out. And it prevents any unnoticed propagation of germs, spores and fungi.

Air circulation system: Additional air purification in the cabin

Clean air in four steps

When it comes to health and safety, there can be no compromise.

SEKA protective ventilation systems are therefore based on a four-step filtering system, the effect of which is given added support by the principle of a pressurised cabin, while an additional air circulation system removes any particles entering the cabin when the operator is getting in and out.

- Step 1: Inlet grille against coarse dirt
- Step 2: Multi-cyclone against coarse dust
- Step 3: High-efficiency particulate filter for fine particles
- Step 4: Activated carbon filter against odours and toxic gases

1. Inlet grille

The first step in the SEKA four-step filtering system is a corrosion-resistant inlet grille which protects the filtering system and prevents coarse dirt particles from entering the subsequent steps in the filtering process. The grille is designed to ensure that the dirt sucked in by the blower adheres to the outside and falls off due to natural gravitation.

The coarse filter requires no maintenance and also does not have to be replaced.

2. Multi-cyclone

The second step in the filtering process deals with the larger dust particles in the ambient air. Here, SEKA uses a maintenance-free cyclone filter that does not require a paper filter. It causes the contaminated air to rotate, utilising the resulting centrifugal forces to remove the majority of coarse dust particles. These particles therefore do not have to be caught by the subsequent HEPA filter, which significantly increases its service life.

3. High-efficiency particulate filter

The particle filter is used to separate all dust particles smaller than 10 µm. According to the DGUV 201-004 standard (formerly BGI581), it must conform at least to filter class H13 in accordance with EN 1822. SEKA sets standards with the higher filter classes HEPA H14 or ULPA U15, which hold back even ultra-fine particles and achieve an efficiency rate of 99.999%. Dust filters in class H are approved for applications including the removal of asbestos dust.

Because filters made of cellulose can serve as a breeding ground for microorganisms, we use only glass fibre filters.

4. Activated carbon filters

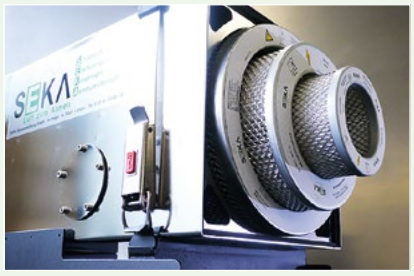
Once the air is free of suspended particles, an activated carbon filter takes care of any foul odours, toxic gases and fumes that might represent health hazards.

The open-pored structure of this carbon is characterised by an extremely large inner surface. Gas molecules

Corrosion-resistant protective grille

Maintenance-free cyclone

Activated carbon



Modular filtering system

Easy tool-free filter exchange

are bound to it either by adhesion (adsorption) or chemical reactions (chemisorption). Once the filter surface is saturated with pollutants, the filter can no longer serve its function and needs be replaced.

Principle of operation:
Flexible and adaptable

SEKA uses a modular filtering system in which the filter inserts are designed in the form of a tube and can be inserted into each other as required. This principle not only ensures compact dimensions and high filter performance, it also opens up more than 100 ways to combine different types of filter. In addition, the protective ventilation system can be converted in just a few steps if the construction machine needs to be adapted for new tasks and pollutants.

Filter exchange
Combination of decisive advantages

SEKA filter sets can not only be exchanged quickly and easily. Numerous tried-and-tested solutions also ensure that the procedure does not require special physical strength. And it also ensures that the dust filtered from the air cannot get into the cabin.

Filter performance:
Volume is crucial

For activated carbon filters in particular, the volume determines both absorption capacity and service life. With a volume of 9 kg, SEKA offers by far the largest activated carbon filters on the market, offering a crucial plus in terms of safety, especially when dealing with large quantities of pollutants.

Filter life:
It's not only size that matters

The service life of a filter is not just a matter of filter area or filter volume. The amount of air that passes through it is also a decisive factor. SEKA protective ventilation systems combine particularly large filters with low air throughput, increasing service life and keeping operating costs down.

Presented and recommended by

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Breathing air

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