Product information

FAKA STEEL

SILOXA

Stationary gas cleaning

Steel activated carbon adsorbers for biogenic gas cleaning



Product information

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Maximum efficiency!



SILOXA FAKA gas cleaning filters are highly effective, steel, stationary systems available in single-chamber, two-chamber, or TWIN activated carbon adsorber configurations.

A steel FAKA activated carbon adsorber is essential for meeting engine manufacturers' fuel gas limit values. It is also effective for complying with formaldehyde limit values as per the German air pollution control regulation (TA Luft).

The gas in the adsorber is purified using activated carbon, which effectively removes pollutants, including H□S, VOCs, and siloxanes. Once the activated carbon reaches its maximum absorption capacity, the spent carbon can be easily discharged into BigBags via the cone-shaped container base. Fresh activated carbon can then be added from a BigBag at the top of the container.

A platform with a fixed ladder or a work platform (DIN EN ISO 14122) ensures safe and comfortable operation in compliance with applicable occupational health and safety regulations. (Note: The FAKA 1500 model does not include a platform.)

Siloxa offers a complete activated carbon replacement service, which includes:

- Delivery using our dedicated service vehicles
- Quick and efficient on-site replacement by trained professionals
- Removal and proper disposal of the spent activated carbon

The optimal time for replacing spent activated carbon can be determined through measuring points located at the bottom of the FAKA container. Gas samples taken from these points can be analyzed to monitor the carbon's uptake and accurately identify when replacement is needed.

Our unique two-chamber system

In the two-chamber FAKA (K2), the separation between the chambers allows spent carbon to be emptied from the lower chamber, while fresh activated carbon is released from the upper chamber. This design ensures maximum utilization of the activated carbon in the lower filter chamber, extending its service life by approximately 15%.

FAKA standard series

Discover the SILOXA FAKA standard series – your reliable solution for efficient gas cleaning.

Our standard series includes a range of proven FAKA models that can be customized to meet your specific needs.

Designed to significantly reduce project timelines, the FAKA standard series features a sophisticated modular design that is not only cost-effective but also quick to deploy. If you have specific requirements, we offer various options to further tailor the activated carbon adsorber to your unique needs, because efficiency and flexibility matter.

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Technical specifications

Features

- Filter system ensures a long service life for the oxidation catalysts
- Significant extension of maintenance intervals for the CHP
- Prevents deposits in the combustion chamber
- High gas processing availability, operational reliability and low maintenance requirements
- Additional options available for retrofitting
- Easy activated carbon replacement using BigBags

Consumption costs

- Activated carbon consumption is determined by impurities and gas quantity
- The adsorber is designed for quick and easy activated carbon replacement, minimizing labor costs and downtime
- Larger adsorber volumes reduce the specific costs of carbon replacement: the more carbon replaced, the lower the specific transport, labor, and downtime costs
- Using BigBags for transferring activated carbon lowers transport costs

Fully equipped

- Steel version with electrostatically dissipative inner coating
- Outer coating with corrosion protection class C3
- 2 gas connections (inlet/outlet): DN 150/150 PN10; for FAKA 6000K2 and FAKA 7000K1: DN 200/200 PN10
- Inspection opening (manhole cover) DN 500, with an additional handhole cover DN 200
- Connecting pieces with ball valves for inerting and gas sampling
- Butterfly valve for activated carbon removal (DN 150)
- Measuring point on the substructure for uptake status monitoring at three filter heights using a gas analyzer (not included)
- Ladder with back protection and platform, or work platform with railing
- Thermal insulation with 50-mm mineral wool and an aluminum sheet jacket

Technical documentation

- Operating instructions, installation/configuration drawing
- P&ID, circuit diagram, and unit list
- DOcumentation available in German, English, French, or Italian (other languages available for an additional charge)

Operating instructions

When using activated carbon adsorbers for hydrogen sulfide removal, please observe the following: The gas must have an oxygen content of at least 0.5% and no more than 2% by volume for effective hydrogen sulfide removal. The exact minimum oxygen content required depends on the hydrogen sulfide load and can be determined in consultation with Siloxa Engineering AG. The operating company is responsible for monitoring the performance of the adsorbers. SILOXA Engineering AG is not liable for any damage resulting from insufficient monitoring of adsorber operation.

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Optional modules

The core of the FAKA system is its body, which can operate independently without the need for additional modules. However, the modules listed below can be added to significantly optimize efficiency and, most importantly, reduce operational costs. For further assistance, please contact one of our specialists.



IN – Thermal insulation

The exterior of the adsorbers is insulated with 50-mm mineral wool, while aluminum sheeting provides protection against external elements. Inside, laminated PUR foam panels are installed at the top to ensure insulation on all sides. This option minimizes the risk of heat loss and temperature fluctuations, enhancing both process stability and safety.



BV – Butterfly valve

By default, the carbon outlet is equipped with a butterfly valve and handle. If you choose the BV option, the butterfly valve comes with a gear unit and handwheel, further simplifying operation during carbon removal. This option significantly reduces costs and downtime when replacing activated carbon, especially for large adsorber volumes.



BA – Outlet adapter for BigBags

In the standard version, a blind flange is installed directly on the butterfly valve and outlet. When the BA option is selected, a supplementary outlet adapter is added in between. This adapter allows the activated carbon to be discharged into the BigBag with minimal dust release.



IA – Inlet adapter*

An inlet adapter can be added to the gas inlet, featuring a sampling connection, an inertization connection (each with a ball valve and sealing plug), and an additional DN 50 connection (with sealing plug) for dust suction. Choose this option to simplify sampling and inertization, as well as to reduce dust during activated carbon replacement.

* If this option is not selected, the customer must provide an inertization connection in the supply line.



MS – Measuring probes

To facilitate better adsorber monitoring, a factory-installed measuring lance kit can be added. The ball valves mounted on the underside allow for easy sampling to determine the adsorber's uptake status. Measurements can be taken at three different heights, depending on the ball valve configuration. The sampling points are sealed with plugs. This option enables more precise timing for activated carbon replacement, improving the adsorber's efficiency and reducing costs.

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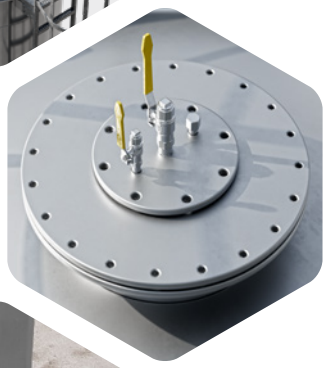
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Optional modules



PL – Platform, ladder and safety door

If the stationary filters are not easily accessible, they can be equipped with a platform designed in accordance with DIN EN ISO 14122. This platform ensures safe operation in compliance with relevant occupational health and safety standards. It provides sufficient space for operating personnel to efficiently replace the activated carbon.



CV – DN 200 cover opening

The filters include an additional handhole cover above the manhole to enable quicker filling. With a minimized number of screws, the cover is easy to open and close. Optionally, this cover can be equipped with three connecting pieces, each featuring ball valves and sealing plugs. These valves are easily accessible and can be used, for example, as an inert gas outlet.



IK – Installation kit

We offer a customized bolt anchor system for installation on a concrete slab, designed according to our installation specifications.



AU – Installation

Our professionals install the activated carbon adsorber on a foundation supplied by the customer.



IBN – Commissioning

Commissioning and on-site instruction provided by our trained professionals.

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Deflagration arrester
- Equipped with 2 flame arresters
- EC type examination certificate in accordance with Directive 2014/34/EU (ATEX 95) and EN 12874
- Includes a PT100 resistance thermometer

Gas heating
- Flanged tube bundle heat exchanger for biogas heating; all gas-contact parts made of 1.4571 stainless steel
- Pressure resistance: gas side up to 0.5 bar (gauge); jacket side up to 6 bar (gauge)
- Gas connection depends on the volume flow
- 1" heating connection
- Heating water supply: 700 kg/h at 70–90°C (provided by the customer)
- Integration into the gas supply pipe is the customer's responsibility

H_2S online analysis
- 0–100 ppm gas sensor
- Includes condensate trap
- Evaluation unit with 4 potential-free contacts and analogue output, Illuminated 4-line display, 2 alarm thresholds, buzzer, and fault relays
- Power supply and communication must be connected and evaluated by the customer
- Suitable for both indoor and outdoor installation

Air metering unit (for gas containing less than 0.5 vol% O_2)
- Diaphragm pump
- Flow rate indicator with regulating valve
- Controlled by the customer
- TÜV safety test report provided

Installation / Commissioning
- The activated carbon adsorber is installed on a foundation provided by the customer
- Commissioning and operational instruction services are available

Safety temperature monitor
- Continuous temperature monitoring
- Protects against overheating and material damage
- Enhances safety and prevents accidents
- Enables early detection of malfunctions

Safety pressure relief valve
- Protects against overpressure and excessive pressure
- Prevents system and equipment damage
- Reduces the risk of explosions or bursting
- Automatically relieves pressure when it exceeds safe levels
- Improves operational safety
- Extends plant service life