

HUBER Active Carbon Filter CONTIFLOW® GAK

- ▶ Simple process for the removal of trace substances (fourth treatment stage)
- ▶ No shutdowns necessary for cleaning
- ▶ Reuse of the activated carbon

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The challenge – Our solution

With the new EU municipal wastewater directive, the discharge criteria for many municipal and industrial wastewater treatment plants are becoming significantly stricter, especially with regard to dissolved organic substances. Municipal sewage plant effluents in particular are among the most critical paths of entry for micropollutants into surface waters. Many of these so-called trace substances are hazardous to the environment and health, are not readily biodegradable and can accumulate in the environment.

With the HUBER Active Carbon Filter CONTIFLOW® GAK, HUBER has developed a versatile and reliable key component for the removal of trace substances (fourth treatment stage), which, cleverly combined with the HUBER Pile Cloth Media Filter RotaFilt® or the HUBER Sandfilter CONTIFLOW®, represents an ideally matched process solution.

However, also in industrial wastewater treatment, the HUBER Activated Carbon Filter CONTIFLOW® GAK finds a steadily growing field of application. Especially when it comes to removing dissolved organic COD compounds and pollutants to meet stricter discharge criteria, adsorptive treatment stages with the HUBER Active Carbon Filter CONTIFLOW® GAK are the technology of choice.

Description

The HUBER Active Carbon Filter CONTIFLOW® GAK is an upflow active carbon adsorber with granulated activated carbon (GAC) as filling. It has a modular design and is available as a stainless steel tank or optionally as concrete construction.

The HUBER Active Carbon Filter CONTIFLOW® GAK is designed for continuous operation. This means that no feed interruptions are necessary for flushing the activated carbon.

As the inflow slowly streams through the activated carbon bed from bottom to top, dissolved organic particles such as trace substances are adsorbed on the large inner surface of the activated carbon. The purified water flows off via a weir in the upper part of the filter.

As the pressure loss increases, the activated carbon is gently conveyed from the bottom of the hopper into the scrubber located at the top, where it is cleaned from particulate residues. The particles are separated with a small partial flow, the so-called wash water.

The activated carbon, which has been cleaned of solids but is still partially loaded with micropollutants, then falls back down onto the filter bed, creating an internal activated carbon circuit. As operation progresses, the loading on the internal surface of the carbon slowly increases.



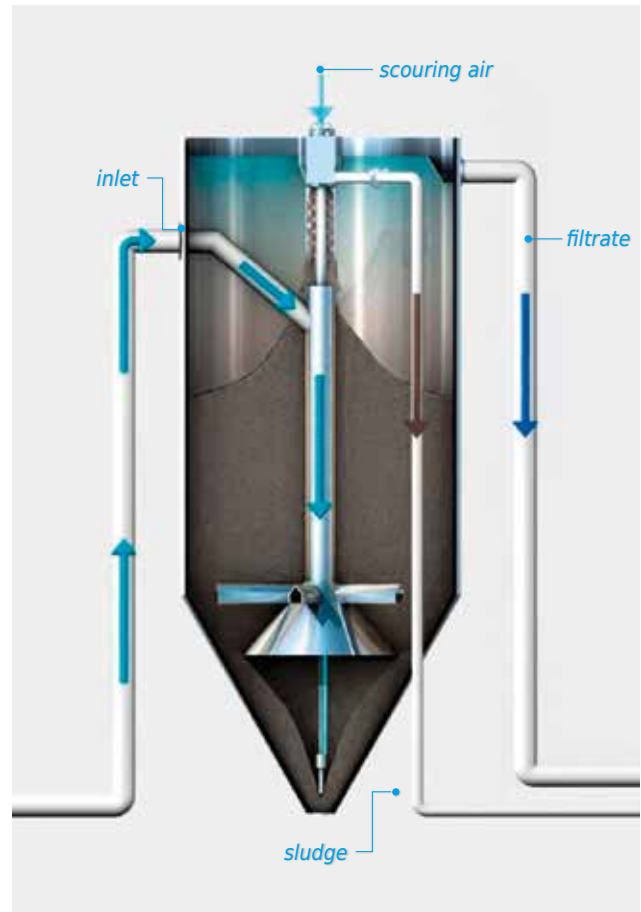
HUBER Active Carbon Filter CONTIFLOW® GAK (tank design).

Fields of application

- ▶ Adsorption of trace substances in advanced wastewater treatment (fourth treatment stage)
- ▶ Biological secondary filtration for the removal of trace substances following ozonisation (BAC filtration)
- ▶ Removal of dissolved COD compounds in industrial wastewater treatment (process wastewater, recirculation water)



24 HUBER Active Carbon Filter CONTIFLOW® GAK with upstream ozonisation.

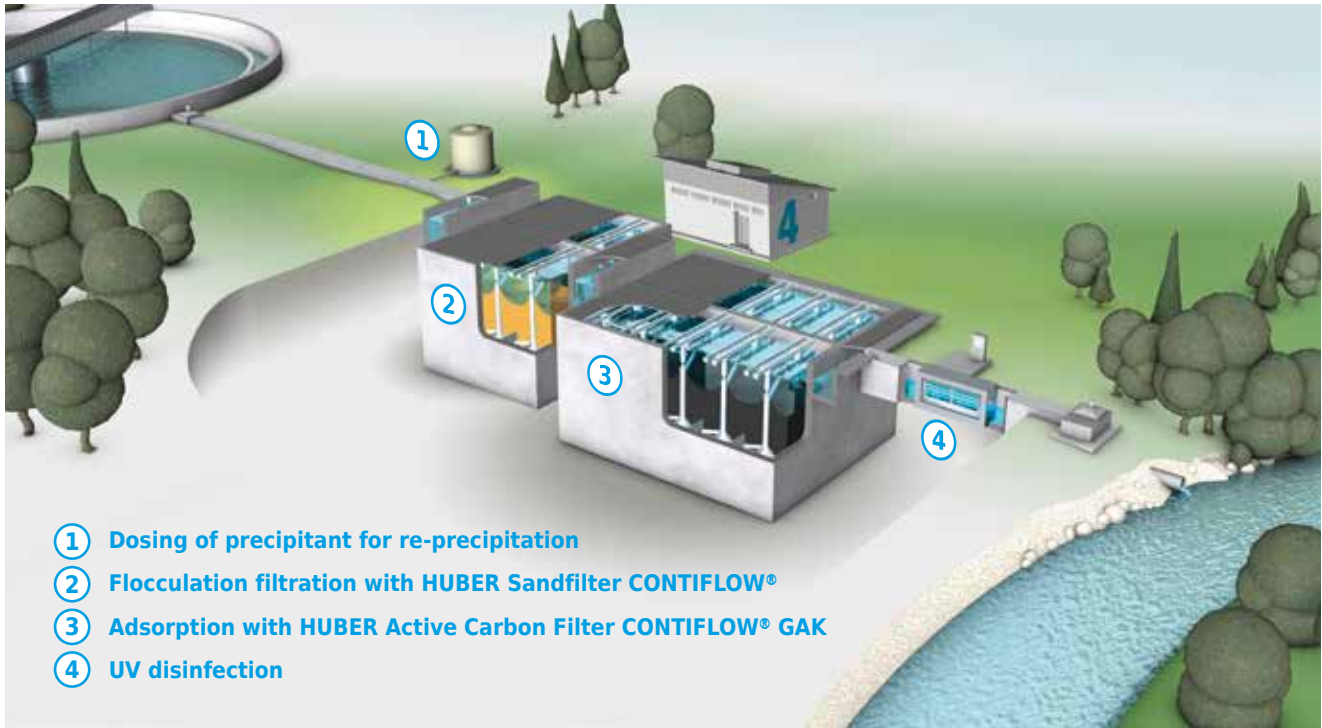


HUBER Active Carbon Filter CONTIFLOW® GAK.

Solution concepts



Variant 1: Combination of ozonisation with subsequent activated carbon filtration (GAK), upstream cloth filtration (police filter) and downstream UV disinfection.

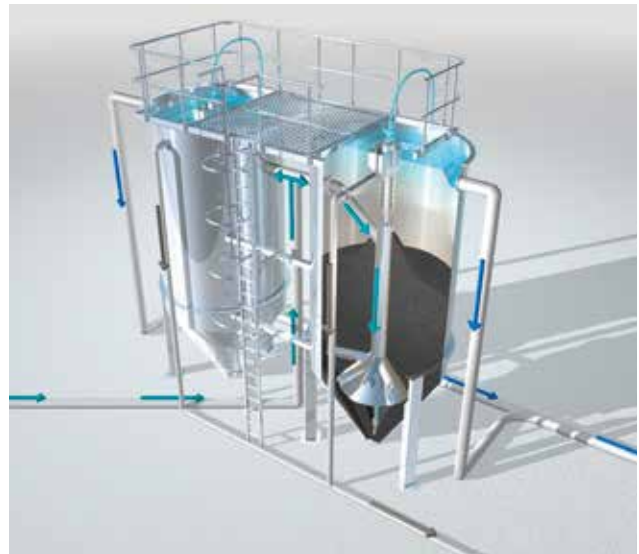


- ① Dosing of precipitant for re-precipitation
- ② Flocculation filtration with HUBER Sandfilter CONTIFLOW®
- ③ Adsorption with HUBER Active Carbon Filter CONTIFLOW® GAK
- ④ UV disinfection

Variant 2: Flocculation filtration for phosphorus elimination with subsequent activated carbon filtration (GAK) and downstream UV disinfection.

All advantages at a glance

- ▶ Easy to retrofit on existing sewage treatment plants due to modular design
- ▶ Low-maintenance plant operation, making it ideal for smaller sewage treatment plants
- ▶ No complex carbon dosing technology as with PAC processes
- ▶ No dirt and dust loads as with PAC processes
- ▶ No precautions for explosion protection as with PAC processes
- ▶ No secondary filtration required as with PAC processes
- ▶ No shutdowns necessary for rinsing the activated carbon bed
- ▶ Activated carbon can be regenerated and largely reused



HUBER Active Carbon Filter CONTIFLOW® GAK (tank design).

Filter sizes

	50 C	51	72
Filter area	5.0 m ²	5.1 m ²	7.2 m ²
Max. throughput	35 m ³ /h	35 m ³ /h	50 m ³ /h
Max. air quantity	1.5 Nm ³ /h	1.5 Nm ³ /h	2.5 Nm ³ /h

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