

Dedusting technology

...just the right thing for everyone -
individually adapted

Flue gas cleaning and dedusting technology

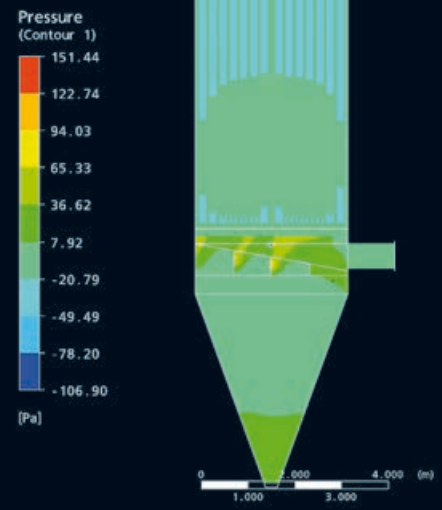


HELLMICH

So that the air stays clean!

Hellmich has been developing clever solutions for dedusting and flue gas cleaning, for pipelines and apparatus engineering for over 45 years.

Our expertise in development results in tailor-made, economic equipment for the purification of large surfaces and machines in addition to air purification.



Flue gas cleaning and dedusting technology

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stays clean!

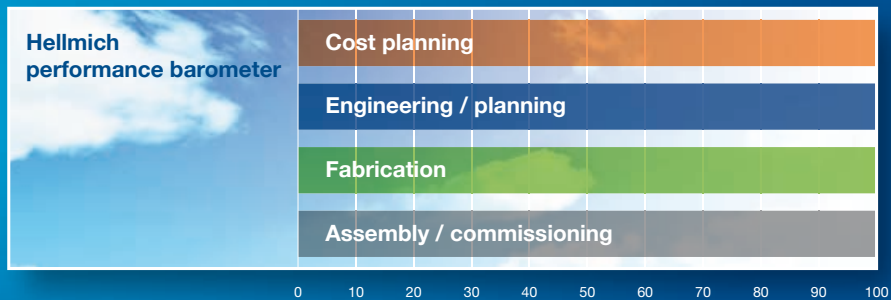




Hellmich potential

We are your experts for dedusting engineering, flue gas cleaning, pipelines and apparatus engineering. We will advise and support you individually from the tender right up to commissioning. We can react to your requirements quickly and flexibly. Challenge our knowledge and our experience:

- during planning
- during system selection
- in the approvals process
- during equipment operation



Enterprise clean air

Our successful, development-friendly family company has been dealing with environmental engineering since its founding in 1963 by Friedrich Hellmich. Our focus in this context is always on technically well thought-out, practical and inexpensive solutions for all sectors of air purification. We place emphasis on high-quality, heavy-duty technology which proves itself in practice day after day.

Hellmich products in operation worldwide

The Hellmich range of products is versatile and extensive. Whether central vacuum cleaner, dedusting equipment, silo add-on filters or pneumatic conveying systems, we can develop just the right equipment for all possible applications. Complete flue gas cleaning systems with piping, flues and heat exchangers round off the range of products.

More than 500 flue gas cleaning units and over 1000 dedusting plants being operated worldwide are proof of the high-quality, long service life and economic efficiency of our products.



Experience



Know-how



Solutions



So that the air stays clean!

...the compact device for a wide range of applications

EE-D single deduster

It is low-maintenance, versatile and energy-saving - we developed our EE-D single deduster for the cleaning of production works with a limited number of dust sources

Dedusting technology

Applications

Dedusting of production facilities/ machines with limited number of dust sources

The benefits

- Low space requirements
- Low energy consumption
- Stable construction
- Wide range of applications

The functional principle

Our EE-D single deduster can be used anywhere where there is only a limited number of dust sources to be cleaned. It has been designed for airflow quantities of between 4,000 and 13,000 Bm³/h.

The basic component in the EE-D is a filter housing with a dust collection hopper, both of which are made from stable sheet steel. The necessary fan is mounted on top of the filter housing.

The dedusting facility contains several filter hoses which are compiled to form groups. The groups are successively cleaned using a compressed air wave passed through a solenoid valve. The compressed air wave causes a rapid pressure increase in the filter hoses, which then results in a brief reversal of airflow through the filter hoses.

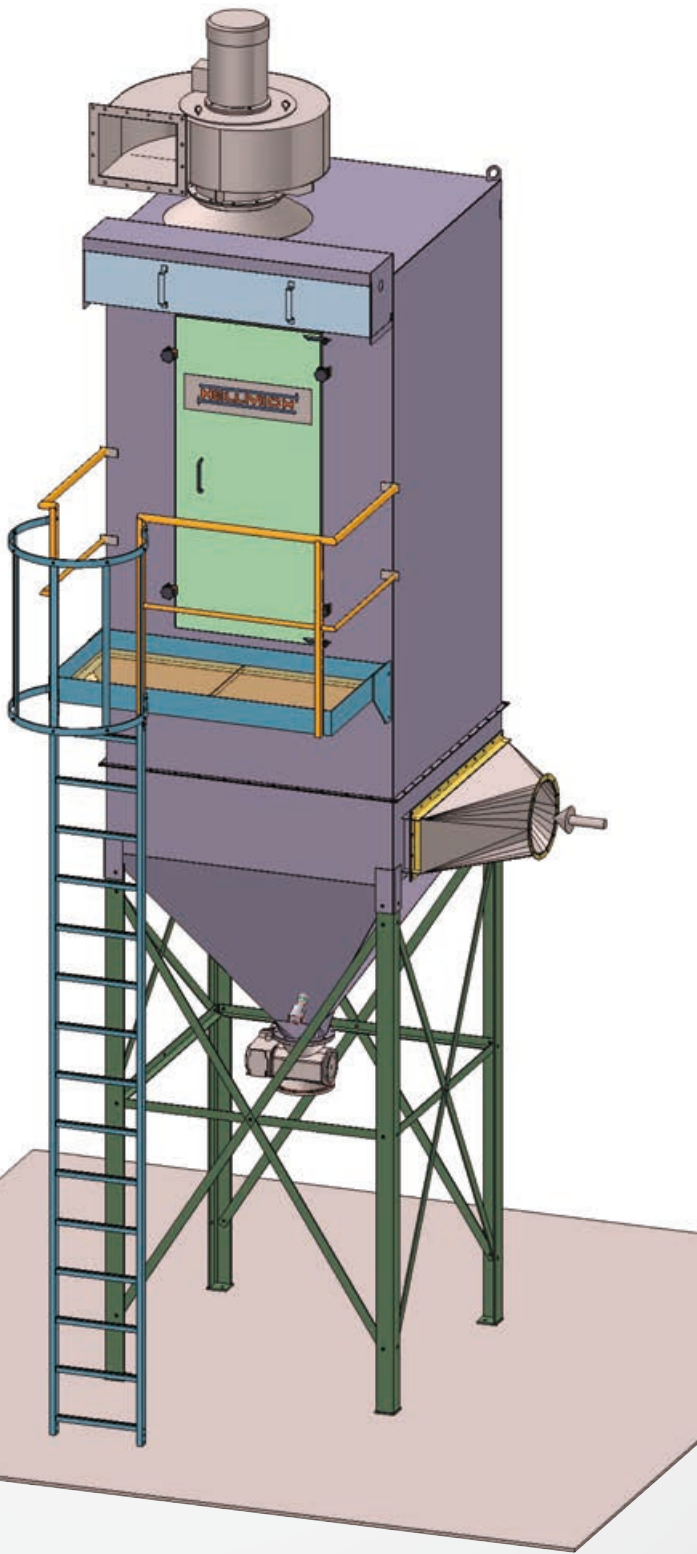
The dust cakes are loosened and fall down. Cleaning off is triggered by an adjustable differential pressure switch as soon as the dust-laden filter hoses have reached the preselected resistance. The cleaning process is inexpensive because it only takes place when required. The compressed air quantity necessary is dependent on the type and quantity of dust.

Single deduster (EE-D)

Type	Air quantity in Bm ³ /h	Filter area in m ²	Number of filter hoses	A	B	C
EE-D III 4.000	3.720	31,0	64	1.350 mm	1.867 mm	1.547 mm
EE-D III 5.000	4.968	41,4	64	1.350 mm	2.297 mm	1.547 mm
EE-D III 7.000	6.900	57,5	64	1.350 mm	2.997 mm	1.547 mm
EE-D III 8.000	8.280	69,0	64	1.350 mm	3.497 mm	1.547 mm
EE-D III 10.000	10.800	90,0	100	1.650 mm	2.997 mm	1.807 mm
EE-D III 13.000	12.960	108,0	100	1.650 mm	3.497 mm	1.807 mm

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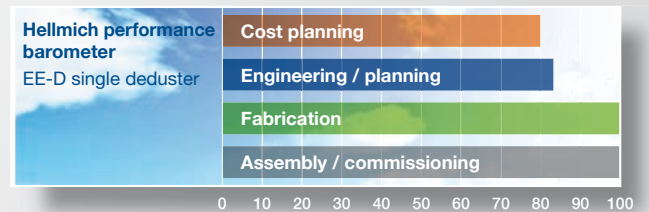


The technology

The fully welded steel plate base frame of the stable steel plate construction consists of a filter housing with a dust collection hopper. An add-on fan is fitted on top of the filter housing to save space. Several filter hoses are compiled to form a group, and these are successively cleaned off using a compressed air wave via a solenoid valve.



The performance



The duration of the cleaning impulses can be set between 0.1 and 1 seconds. The filter hoses are fixed using a snap steel band and double bulge tape. Assembly and dismantling can be carried out without tools.

The single deduster can be operated extremely economically and with low energy consumption at an application range of between 4,000 and 13,000 Bm³/h.

The suctioned-off material can be discharged or transported away as follows:

- double flap valve or rotary gate valve/screw conveyor, conveyor belt etc
- pneumatic transport
- self-tipping transport bucket for forklift operation

...variable application
for every location

HKD III dedusting facility

Dedusting production facilities is an important and demanding task. We have developed a fully automatic, variably constructed hose-filter unit for simultaneous dedusting of several dust sources.

Dedusting technology

Applications

Simultaneous dedusting of several dust sources

The benefits

- Variable modular design
- Heavy-duty sheet steel construction
- Low energy consumption
- Made in Germany

The functional principle

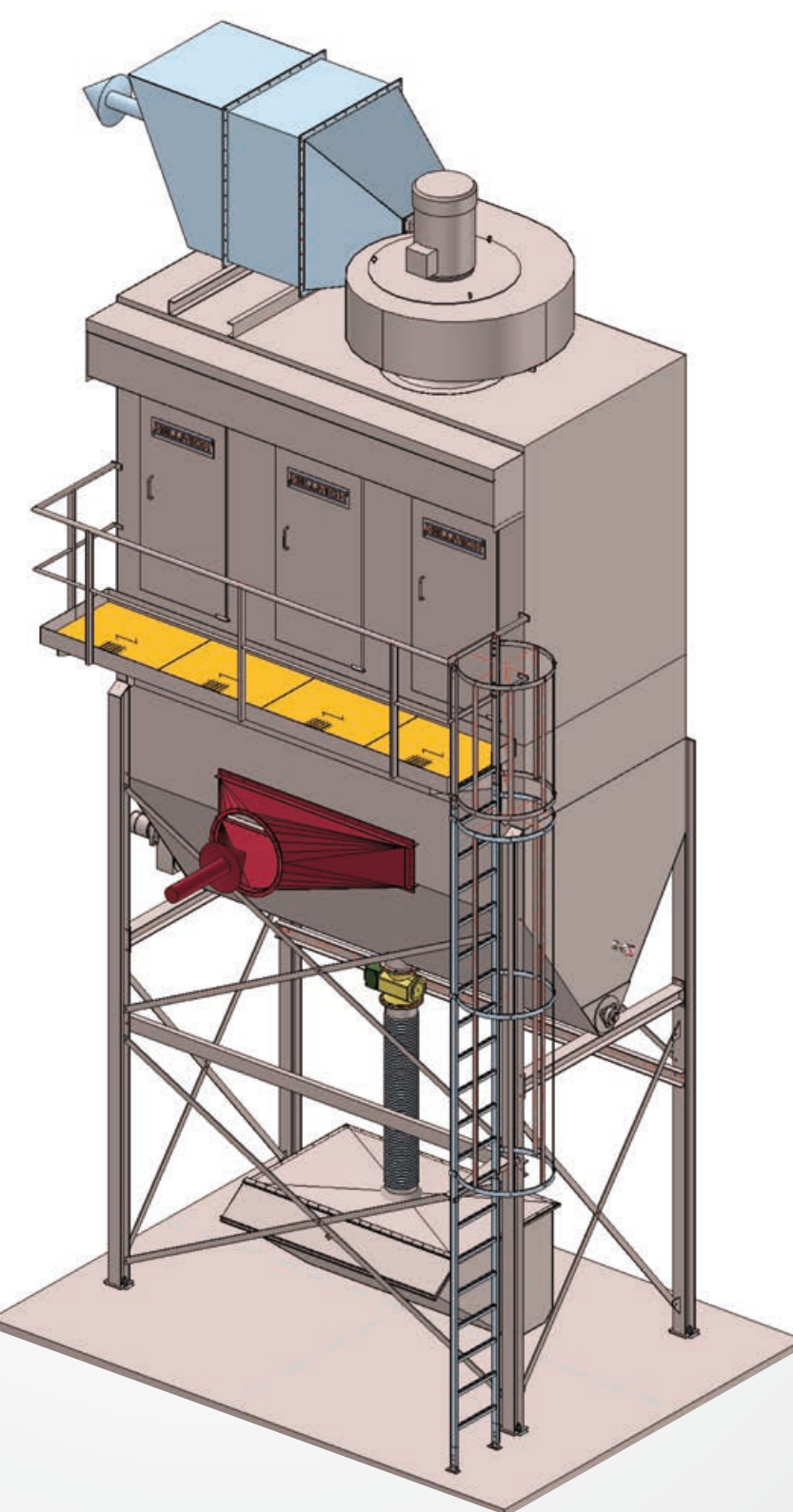
The Hellmich HKD III inline filter plant is a fully automatic and continuously operating dedusting facility. It can be used to simultaneous dedusting of several dust sources. The air quantities to be filtered range from 16,500 Bm³/h up to 120,000 Bm³/h.

The equipment is manufactured as a modular design. This means that several filter hoses are compiled into groups for each module. Cleaning off of the filter media takes place using a compressed air blast via a solenoid valve. This form of cleaning off is extremely economic and energy-saving, since the blasts are only used when differential pressure measurement shows that they are required. Installation and removal of the filter hoses can take place without tools from an installation platform.

Equipment which is being operated in areas with frost risk is fitted with a valve heater and an additional protective cover for the solenoid valve. The pipeline routing required is designed individually. Hellmich only ever uses brand-name components for electronics or electronic components.



So that the air stays clean!



The filter hoses are made of various materials depending on the dust composition. The HKD III is used in the ceramics industry, limestone processing works, foundries, plastics processing and many other sectors.

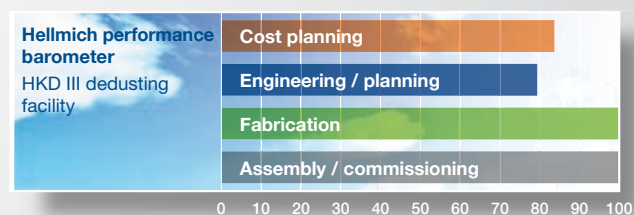


The technology

The facility, which is made in a modular design, compiles several filter hoses into groups for each module. Cleaning off of the filter media takes place using a compressed air blast via a solenoid valve.



The performance



...for powerful,
economic cleaning

HS-D central vacuum cleaner

Well thought-out technical solutions for special cleaning tasks are our specialism. We have developed the high-powered HS-D central vacuum cleaner for simple and efficient cleaning of larger areas.

Dedusting technology

Applications

Cleaning of industrial sectors such as:

- Concentrated feed industry
- Ceramic works
- Foundries
- Steelworks
- Chemical industry
- Industrial mills
- timber-processing industry
and many more

The benefits

- High-powered
- Universally deployable
- Compact construction
- Low maintenance costs
- Reduces your upkeep costs

The functional principle

The central vacuum cleaner from Hellmich is suitable for numerous applications in the industrial sector.

The facility has a particularly high suction performance and easily removes a wide range of materials from quartz sand up to cocoa beans. This allows working areas or other soiled areas to be quickly and simply cleaned.

The dust extractor is also suitable for cleaning machines and equipment or other difficult-to-access locations on top of surfaces. A clean environment allows you to considerably reduce your upkeep costs. The equipment is fitted centrally.

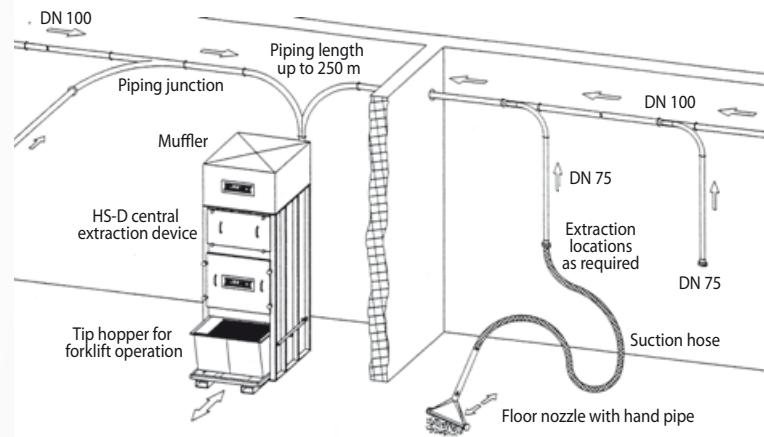
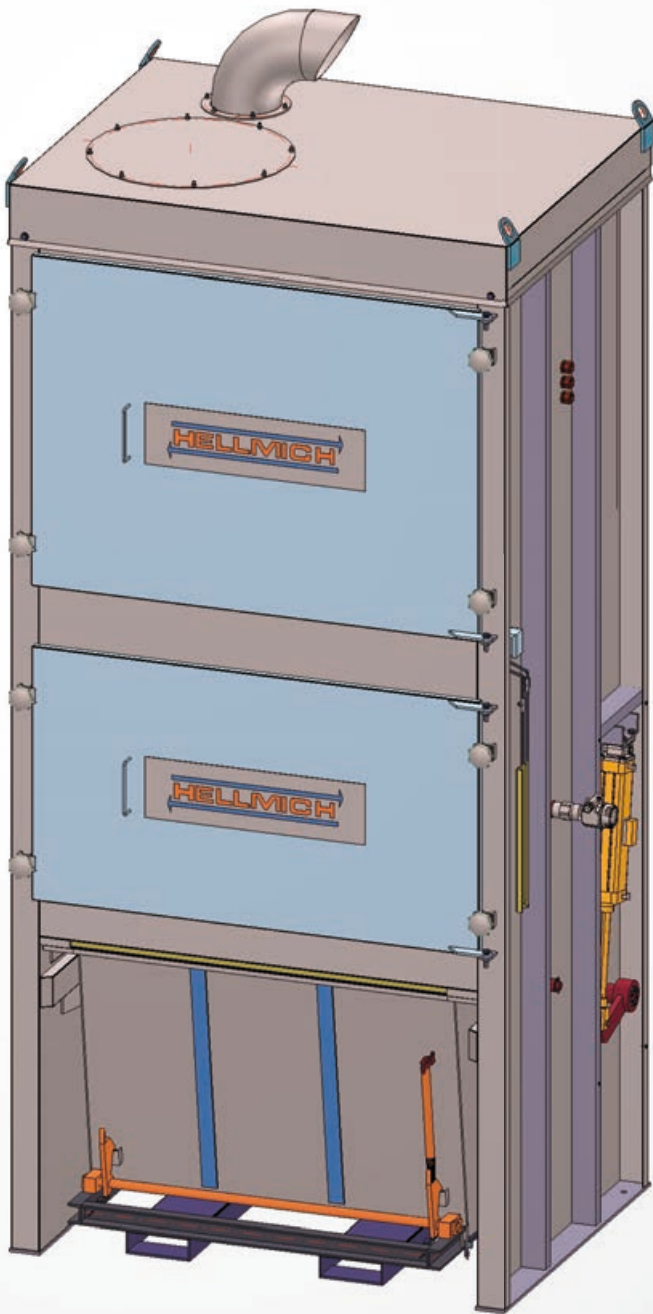
From the central point, a piping system of 100 mm diameter is routed through the entire works within a radius of 250 m, and suction connections can be installed where they are required. However, only 2 extraction locations can be operated simultaneously.

The dust is collected centrally and then fed to the disposal system. The extremely high extraction capacity of the central vacuum cleaner guarantees that the entire plant can be cleaned rapidly and without problems.

Use of the HS-D also pays for itself due to the considerably reduced time required for the actual meaning operation. A selection of nozzles optimally designed for the relevant requirements is available for the HS-D central vacuum cleaner.



So that the air stays clean!

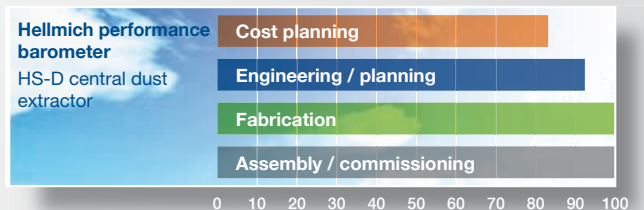


The technology

The equipment is fitted centrally. The piping system can be routed through the entire works up to a radius of 250 m and extraction locations can be fitted wherever they are required. The dust is collected centrally and then fed to the disposal system.



The performance



HS-D central vacuum cleaner

Its construction cannot be compared with the mobile industrial vacuum cleaner - the HS-D is installed centrally. A system of 100 mm diameter piping is then routed through the works from this location. Suction connections at 70 mm diameter are then attached in accordance with operational conditions.

The maximum distance between an extraction location and the vacuum cleaner is up to 250 m thanks to the extraordinary suction power of the HS-D vacuum cleaner. This allows your entire operation to be easily, rationally and simply cleaned.

The central vacuum cleaner is available in two versions:

• Tipping bucket version

The dust is collected in a bucket and transported away by a forklift.

• Trichterausführung

The dust is transported away directly or pneumatically via a chamber lock.

The dust which has been collected can be returned to the material flow if necessary. Both versions can be fitted with explosion pressure relief in accordance with VDE 3673 and a level indicator.

...for a longer
service life

TOW automatic tunnel kiln car cleaning

Cleaning tunnel kiln cars and their fittings required special know-how. We have developed an automatic tunnel kiln car cleaning system which is both efficient and economic.

Pipelines / apparatus engineering / chimneys

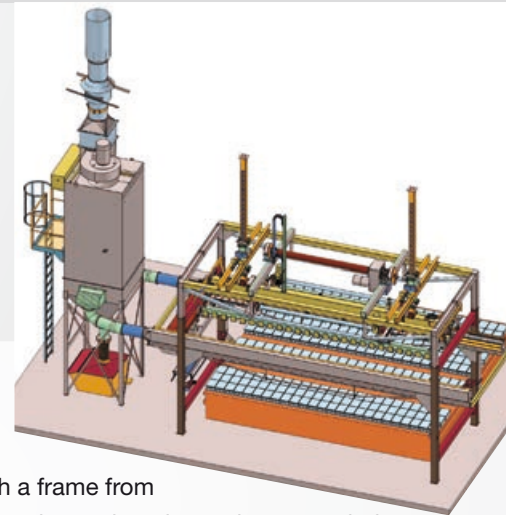
The functional principle

The benefits

- Higher product quality
- Longer kiln car standing times
- Lower energy consumption
- More efficient cleaning
- Continuous automation and production processes

The dust extraction equipment allows the viaduct or hollow blocks and the tunnel kiln wagon plateau to be cleaned of dust and broken brick pieces so that its service life is considerably increased, and so that product quality is raised.

We differentiate between cleaning using a fixed nozzle and cleaning using a movable nozzle. In the case of car cleaning using a fixed nozzle, the tunnel kiln car runs through a frame from which the suction nozzle specially adapted to the setting plateau is suspended.



If cleaning is done using a movable nozzle, the airflow quantity required for cleaning is low enough to enable a smaller dedusting facility to be used. In this case, the nozzle runs across the individual rows and simultaneously cleans both the placing plateau and firing slits.

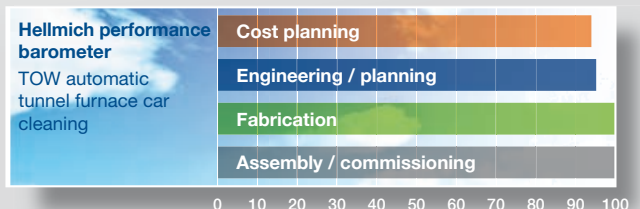
The nozzle runs into the park position after cleaning is complete. The car is then run to the next cleaning position and the suction procedure repeats until the entire wagon plateau is clean.

The hollow blocks can be raised with a lifting device for cleaning the car plateau. In doing so, the draught bricks are gripped with a gripper and then lifted with hoisting gear. After lifting, the lowered cleaning nozzle runs across the plateau and cleans it of small broken pieces and separating sand. The expansion joints are also cleaned out during plateau cleaning. The normal production routine is not disturbed in any way thanks to operation which is adapted to the unloading or setting machine.



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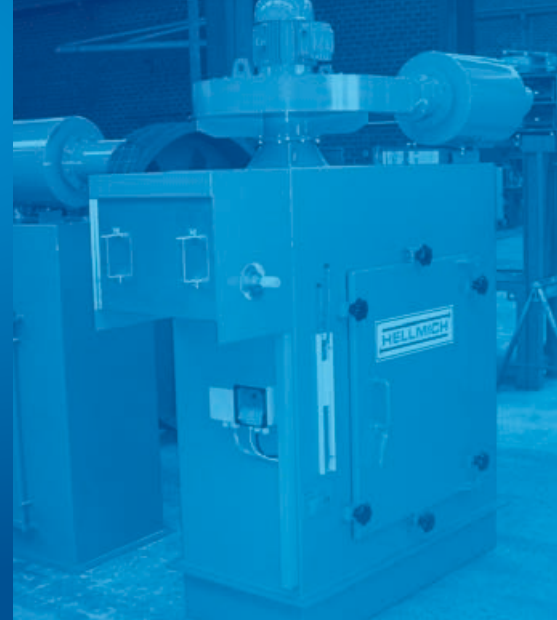
So that the air stays clean!



...for automatic venting
and dedusting

SAF silo add-on filter

The Hellmich SAF filter plant is a completely automatic, continuously working dedusting facility.



Dedusting technology

The functional principle

The robust sheet steel silo add-on filter housing is of welded construction. The filter chambers with mountings for the filter hoses, including the hose bed and nozzle hoses are integrated in this housing.

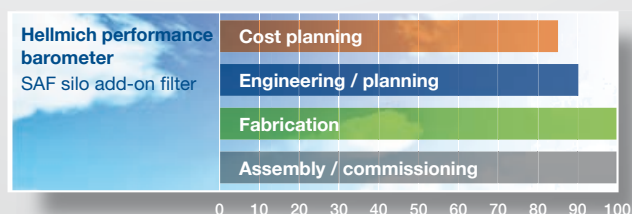
The fan with three-phase motor is mounted on top of the filter housing. The unit contains several filter hoses which are made of different materials depending on the dust composition, and each connected to form one group. The groups are cleaned off successively at intervals. Cleaning off takes place using compressed air via a solenoid valve and nozzle pipe, and it is activated depending on time. The compressed air wave causes a rapid, brief overpressure in the filter hoses so that the dust cakes are knocked off and fall down.

There is a nozzle pipe above each hose group (row) which is connected to a common compressed air reservoir outside the housing. The solenoid valves can be provided with valve heating for frost protection. The actual cleaning-off procedure is triggered by a filter controller. Activation of the cleaning valves takes place using an electronics card where the duration of the compressed air waves (impulse time) and the pause duration between compressed air waves (pause duration) can be set.

The cleaning-off impulse should be 0.2 seconds and the pause duration should be 12 seconds, but both values can be individually adjusted. The cleaning process takes place continuously and starts immediately the fan is switched on via a switch or external contact, e.g. from the silo, pressure container or silo vehicle. The suction fan runs in external star delta operation. The unit can also be switched off via a switch or externally.

The benefits

- Versatile use
- Low maintenance
- Economic, energy-saving operation
- Compact construction
- Heavy-duty sheet steel enclosure
- Practical airflow quantity graduation
- Can also be used for individual dust qualities



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Flue gas cleaning

- ➔ FKA
- ➔ MILL pneumatic conveying
- ➔ HKD-R
- ➔ SGA

Dedusting technology

- ➔ EE-D
- ➔ HKD
- ➔ HS-D
- ➔ SAF

Pipelines / apparatus engineering / chimneys

- ➔ WT heat exchanger
- ➔ DGF pneumatic conveying system
- ➔ TOW tunnel kiln car cleaning
- ➔ Turbo mill
- ➔ Pipelines, apparatus engineering, chimneys, steel construction

Flue gas cleaning and dedusting technology

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