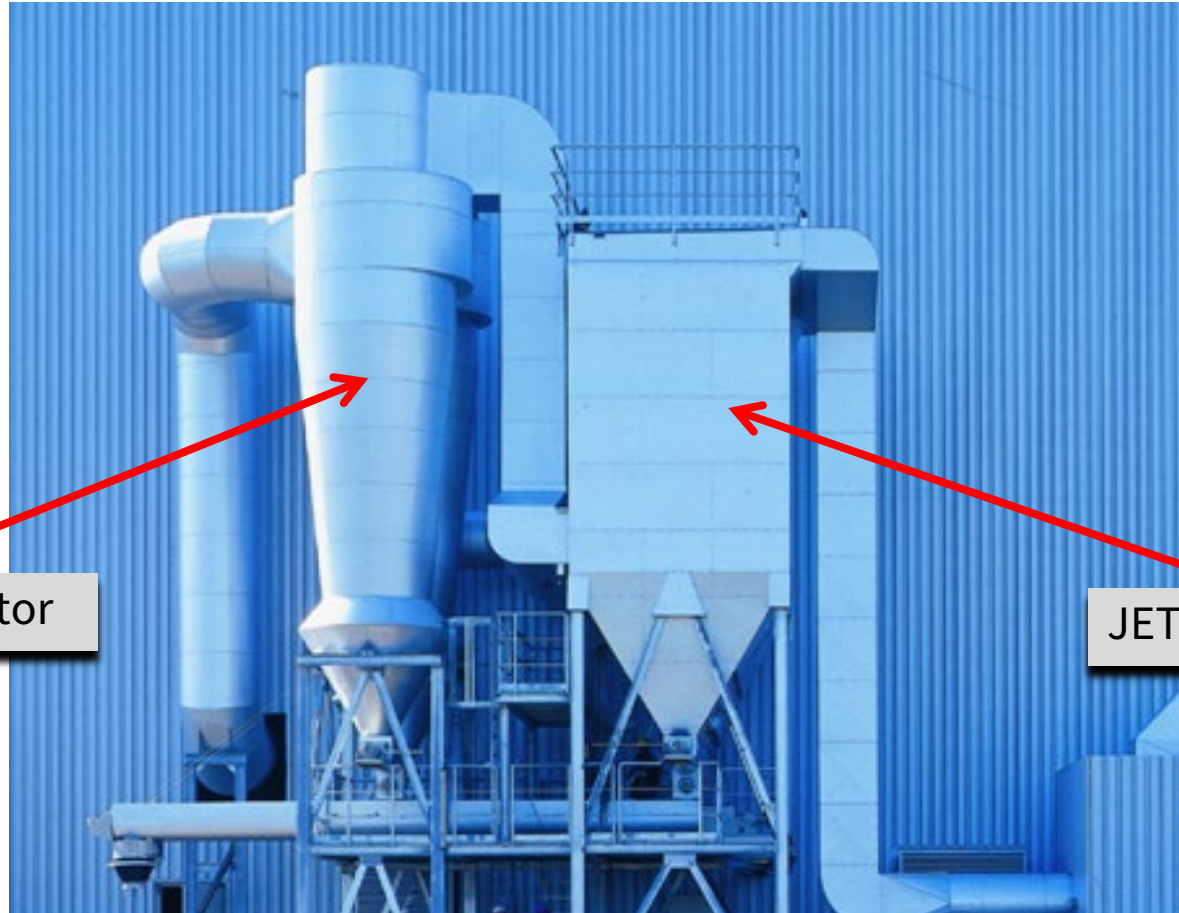


Business Center Dedusting Technology

- **Mr. Torsten Kahl**
- Head of Sales Dedusting technology
- KREISEL GmbH & Co. KG

1	Cyclone Separator
2	JET Bag Filter
3	Special Applications
4	Example

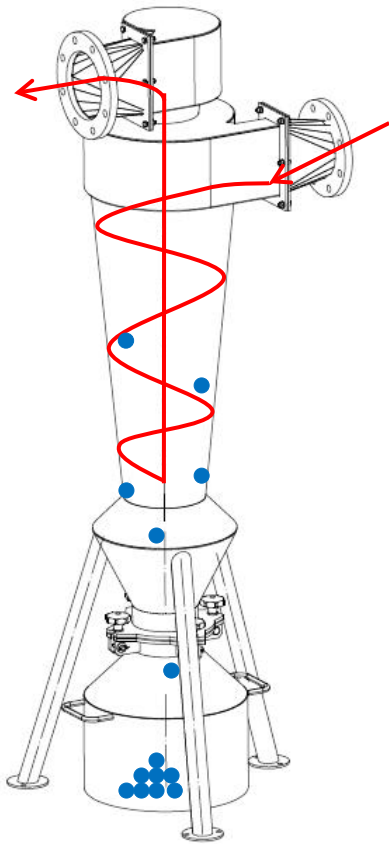


Cyclone Separator

JET-Bag Filter

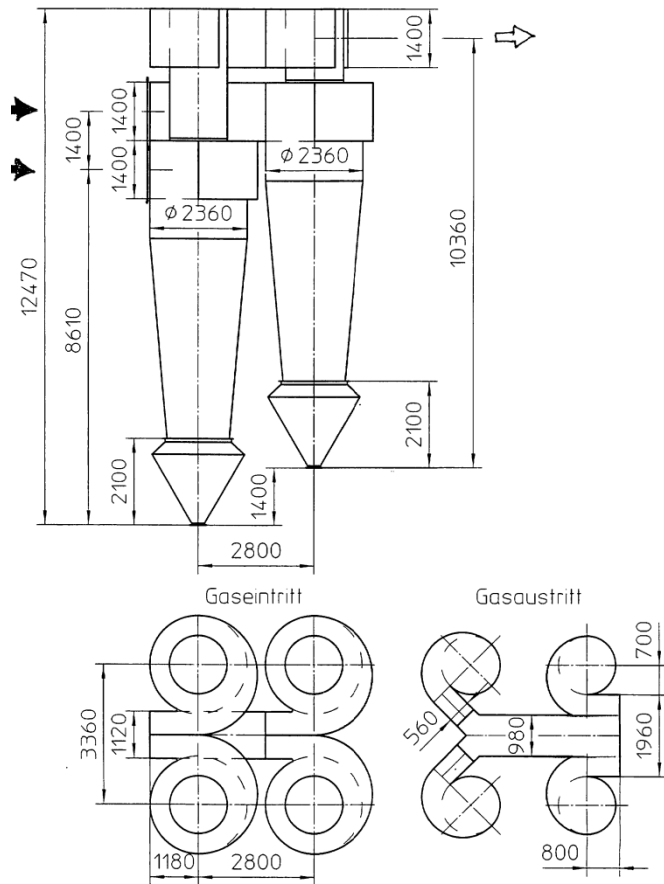
Example Dedusting System

Cyclone Separator



- mechanical centrifugal separator
- also be used as pre-separator and spark catcher
- low energy requirements
- tangentially raw gas inlet
- downwards gas flow
- dust particle separation at cyclone casing
- deflection to immersion nozzle
- tangentially clean gas outlet

Cyclone Separator



- high performance cyclone design KN018 for 570 to 5,760 m³/h
- pre-separator design KN019 for 3,600 to 57,600 m³/h
- also realizable as double cyclone separator or cyclone battery for higher gas flows or structural limitation
- made of carbon steel, stainless steel or wear resistant material
- realizable for gas temperature up to 1,000 °C with heat resistant steel

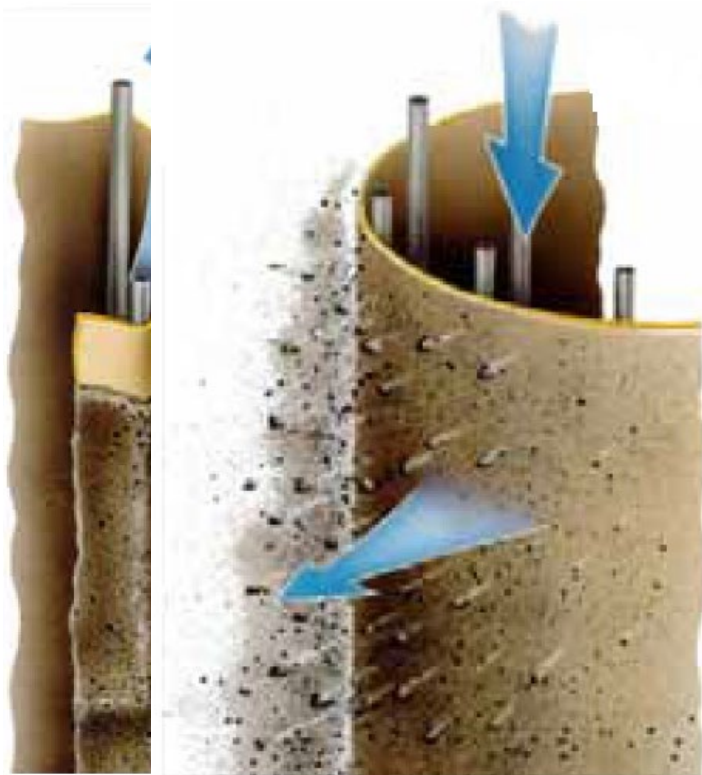
Cyclone Separator



- Cyclone pre-separator CA 2000 KN019 for 70,000 m³/h

1	Cyclone Separator
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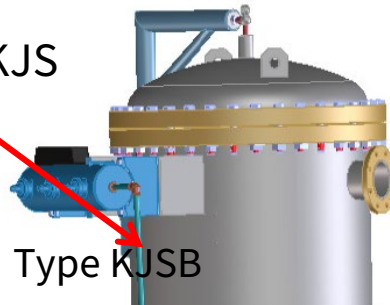
JET Bag Filter



Surface filtration

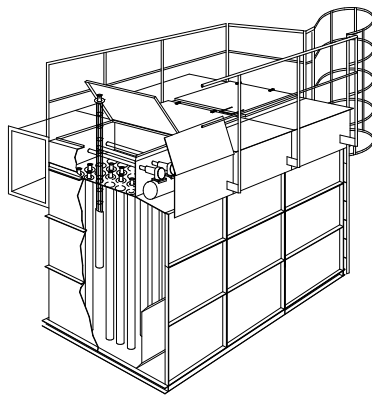
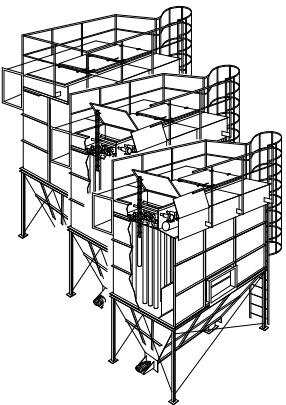
- filter cake improved separation of fine particles
- filter material lay alongside support cage „starlike“
- cleaning with pressure impulses
- additional clean gas would sweep along by venturi
- dust cake discharge
- cleaning sequence would controled as a function of differential pressure or time

Design KJS



Type KJSB

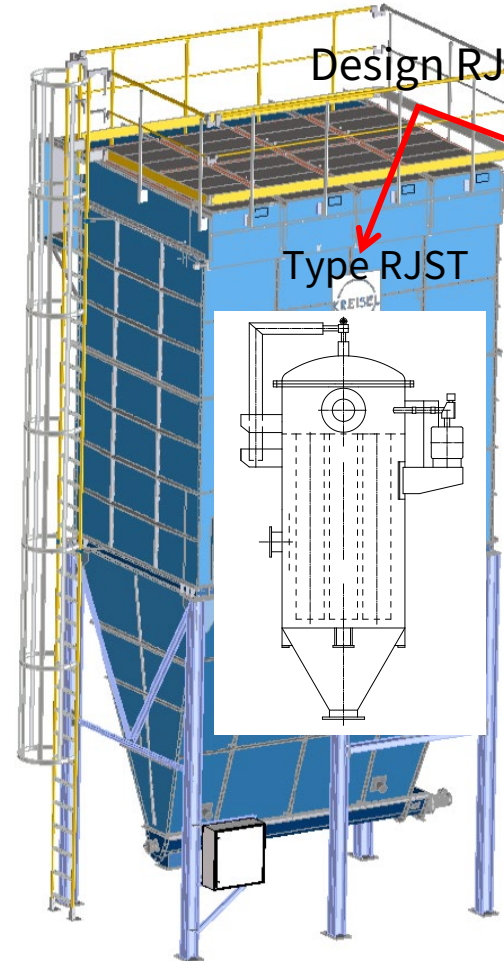
Type KJST / KJSW



Type 10 / 20 / 30 – width 1,120 mm
Type 25 / 35 – width 1,370 mm

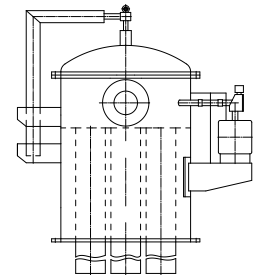


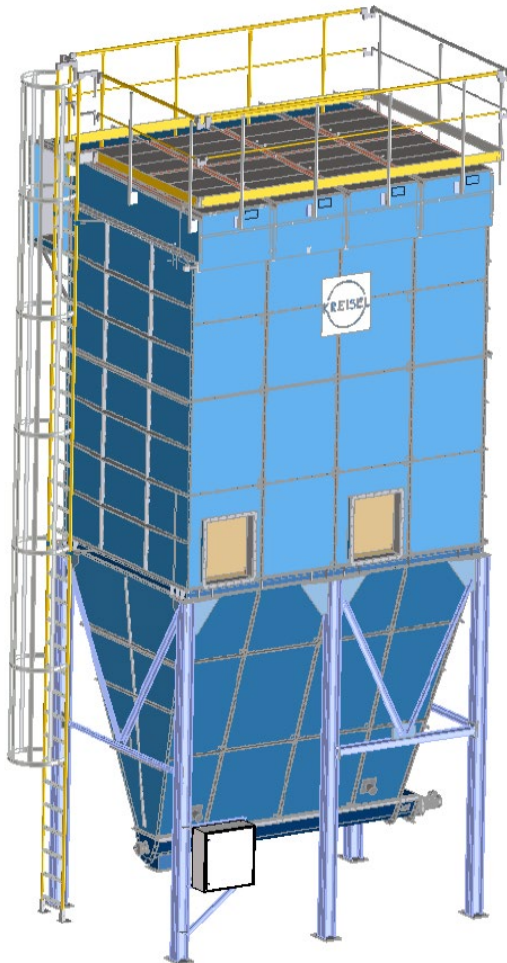
Design RJS



Type RJST

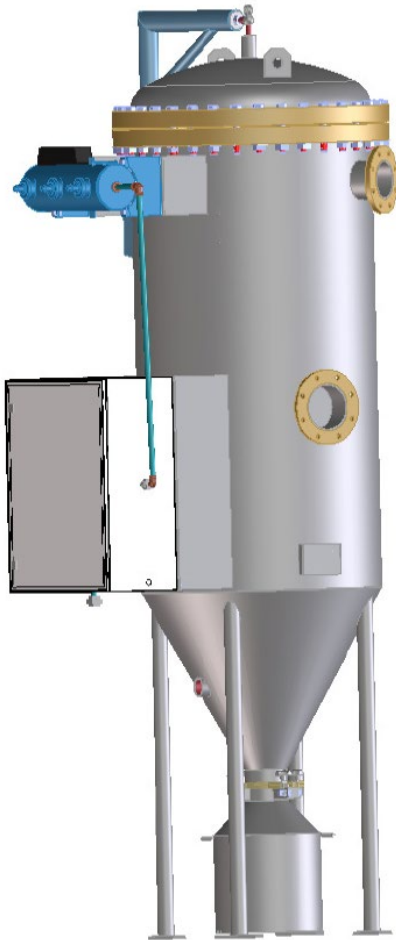
Type RJSB





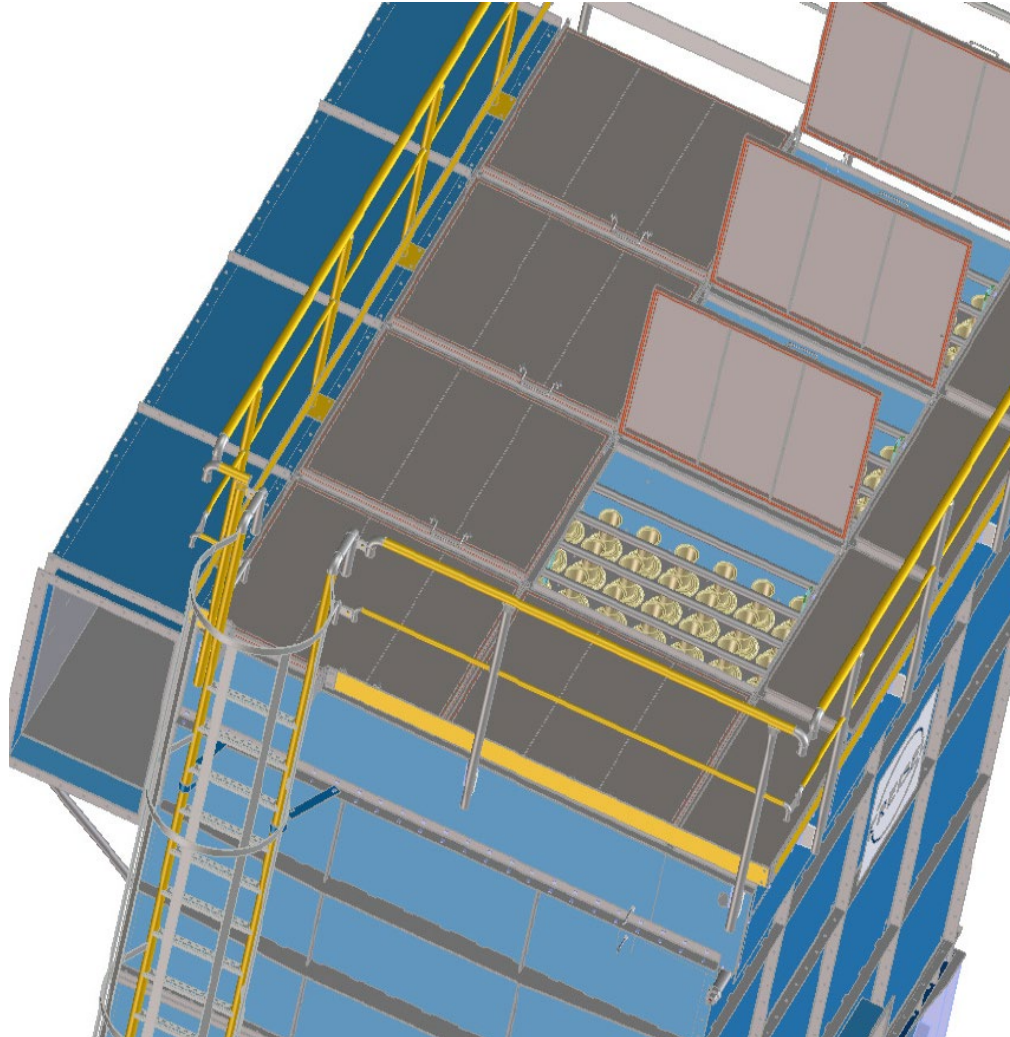
Design KJS

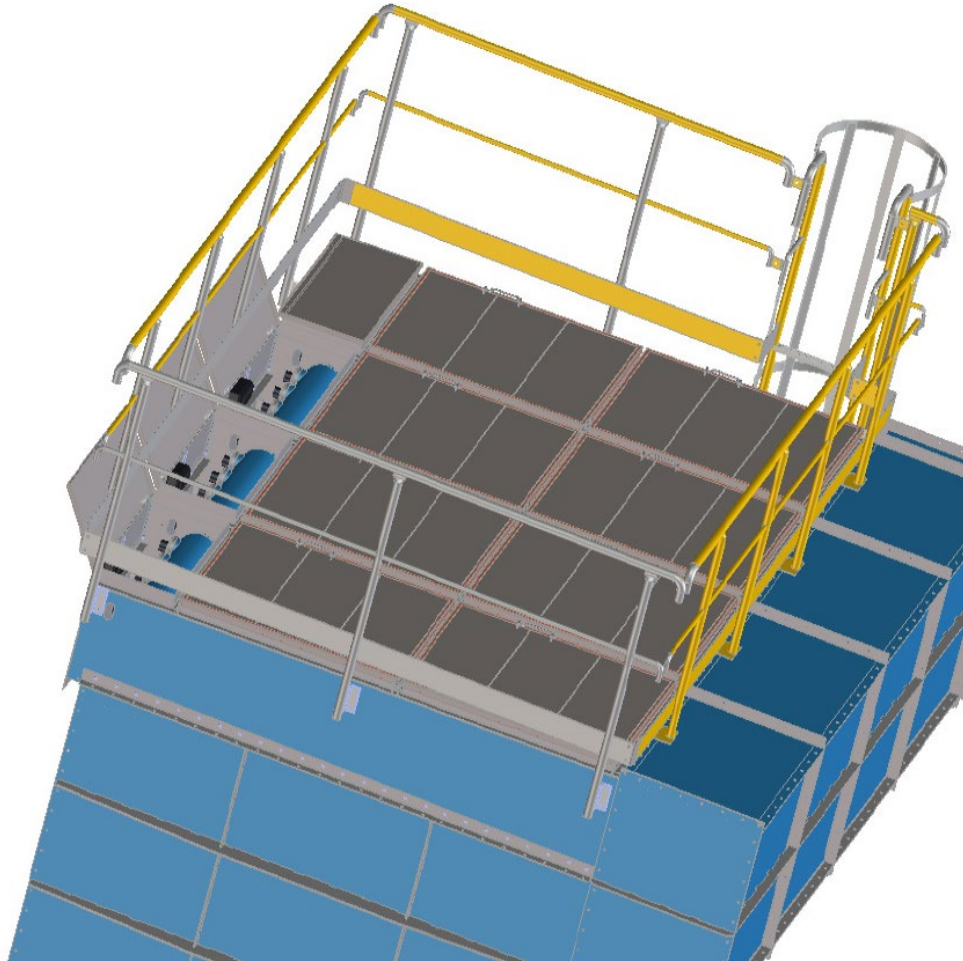
- acceptable operation pressure
 - 5.0 / - 8.0 / - 12.0 mbar
- modular system 1 to 14 sections
- filter bags length 1.2 to 6.0 m
- also available as double row filter
- volume flow 1,500 to 300,000 m³/h
- also available with filter cartridges
- filter cartridge length 0.6 to 2.0 m



Design RJS

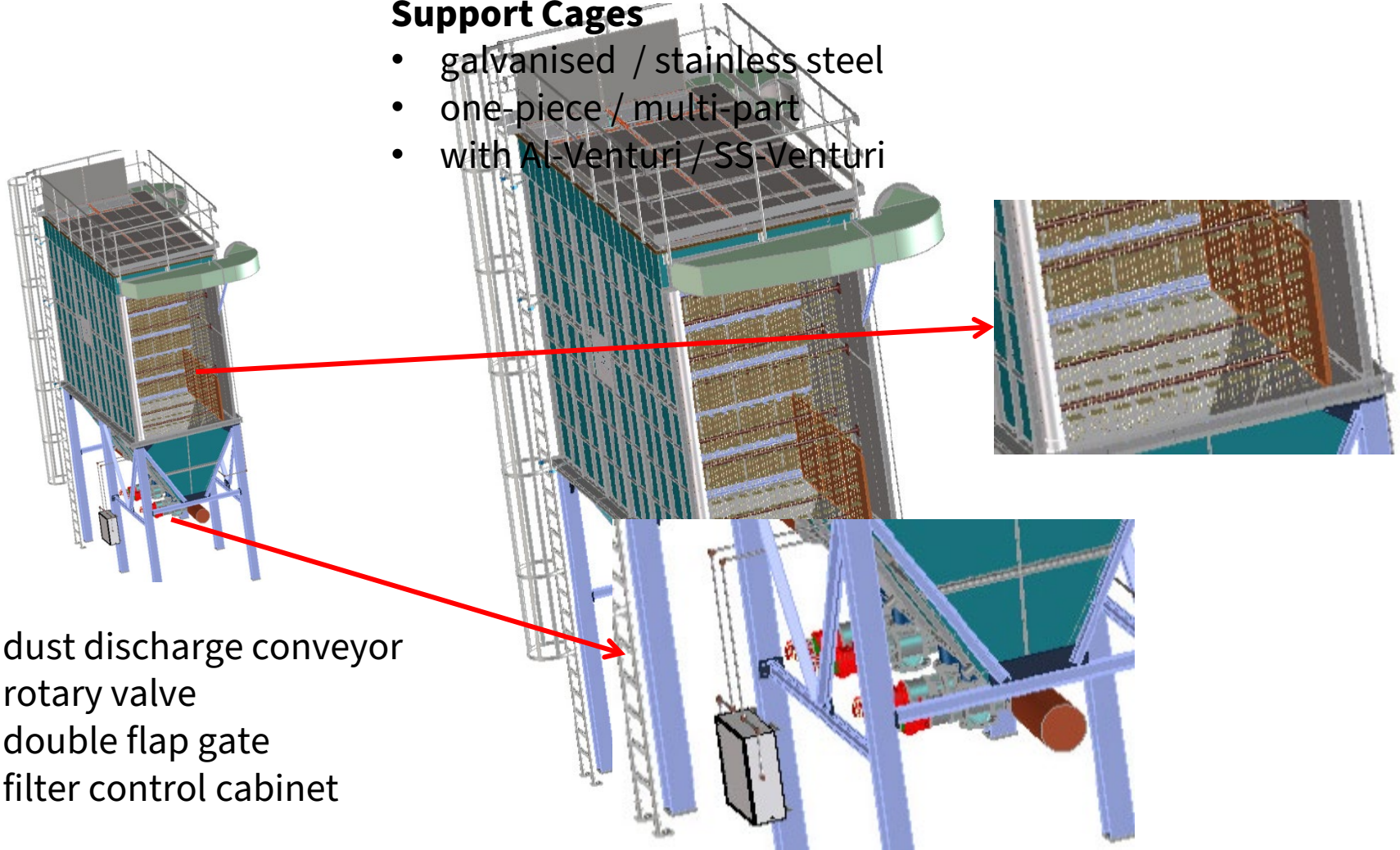
- shock pressure resistant up to 9.0 bar(g)
- also available as pressure vessel
- also available with filter cartridges
- filter bags length 1.2 to 6.0 m
- filter cartridge length 0.6 to 2.0 m





Support Cages

- galvanised / stainless steel
- one-piece / multi-part
- with Al-Venturi / SS-Venturi



- dust discharge conveyor
- rotary valve
- double flap gate
- filter control cabinet

Filter Material

- Cooperation with national und international manufacturers
- Operation up to 250°C constant load, 270°C peak temperature
- with oil- and water repellent surface treatments
- electroconductive with stainless steel addition
- Selection as a result of temperature, gas components (e.g. SO₂) and clean gas requirements
- Realisation of special application (e.g. water vapors filter)



Filter Material

Fibre	Trade name	Technical name	Operation temperature (°C)	Hydolyse	Acid	Alkali	Oxidizer	Solvent
Polypropylene	Meraklon	PP	90	very good	very good	very good	moderate	good
modified Polypropylene	Trol		125	very good	very good	very good	moderate	good
Polyamide	Perlon Nylon Grilon	PA	110	good	bad	good	bad	good
copolymerize Polyacrylnitrile		PAN	110	good	bad	bad	good	good
homopolymeric Polyacrclnitrile	Dolanit Richem	PAN	125	good	moderate	bad	good	good
Polyester	Trevira Diolen Terylene Dacron	PET	150	bad	moderate	bad	good	good
m-Armide	Conex Nomex	AR	180	bad	bad	bad	moderate	very good
Polyphenylenesulfide	Ryton Procon Fortron	PPS	190	very good	very good	very good	moderate	very good
Polyimide	P84	PI	240	good	good	moderate	good	good
Polytetrafluorethylene	Teflon Rastex Toyroflon	PTFE	250	very good	very good	very good	very good	very good
Polytetrafluorethylene + Glass fibre	Tefair		250	very good	very good	very good	very good	very good
Polyvinyl Chloride	Dynel Rhovyl	PVC	75	good	very good	very good	good	moderate
Cotton		BW / CO	95	moderate	bad	moderate	moderate	moderate
Glass fibre		GL	280	very good	good	good	good	good
ceramical fibre		Alumina Silica	500	very good	good	good	good	good

Filter Material

Fibre	Trade name	Technical name	Operation temperature (°C)	Hydolyse	Acid	Alkali	Oxidizer	Solvent
Polyester	Trevira Diolen Terylene Dacron	PET	150	bad	moderate	bad	good	good
m-Armide	Conex Nomex	AR	180	bad	bad	bad	moderate	very good
Polyphenylenesulfide	Ryton Procon Fortron	PPS	190	very good	very good	very good	moderate	very good
Polyimide	P84	PI	240	good	good	moderate	good	good
Polytetrafluorethylene	Teflon Rastex Toyroflon	PTFE	250	very good	very good	very good	very good	very good

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Special application – KJST-Filter ATEX



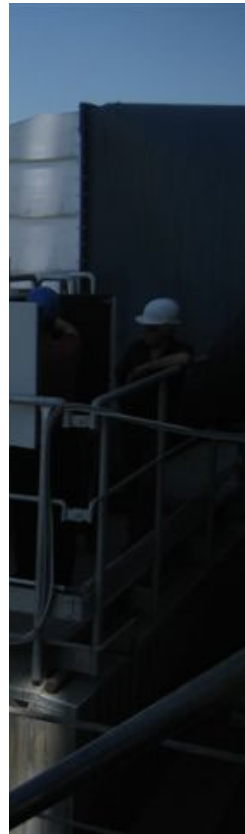
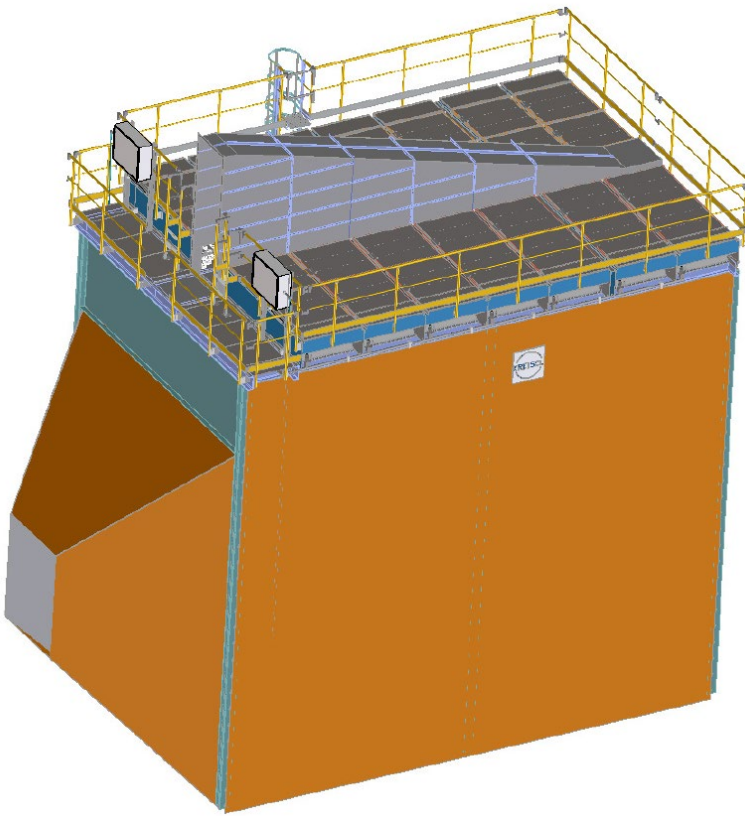
- pressure resistant up to 0.4 bar(g)
- pressure release with bursting discs
- safety grid for filter bags

Special application – KJST-Filter ATEX

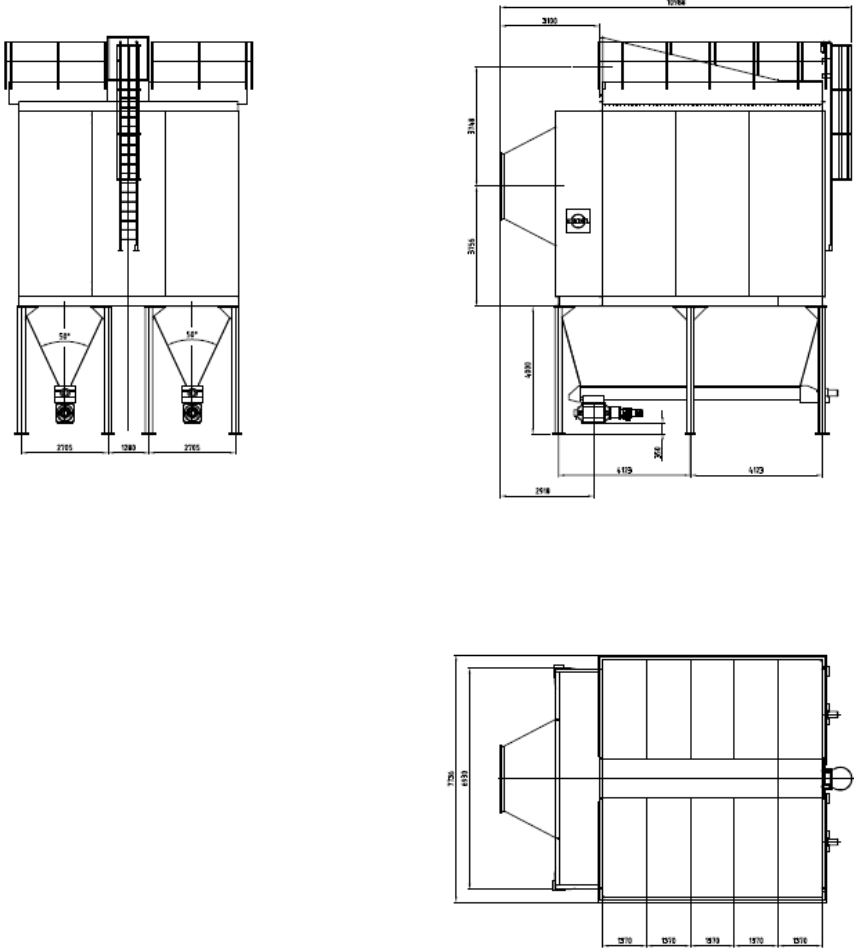
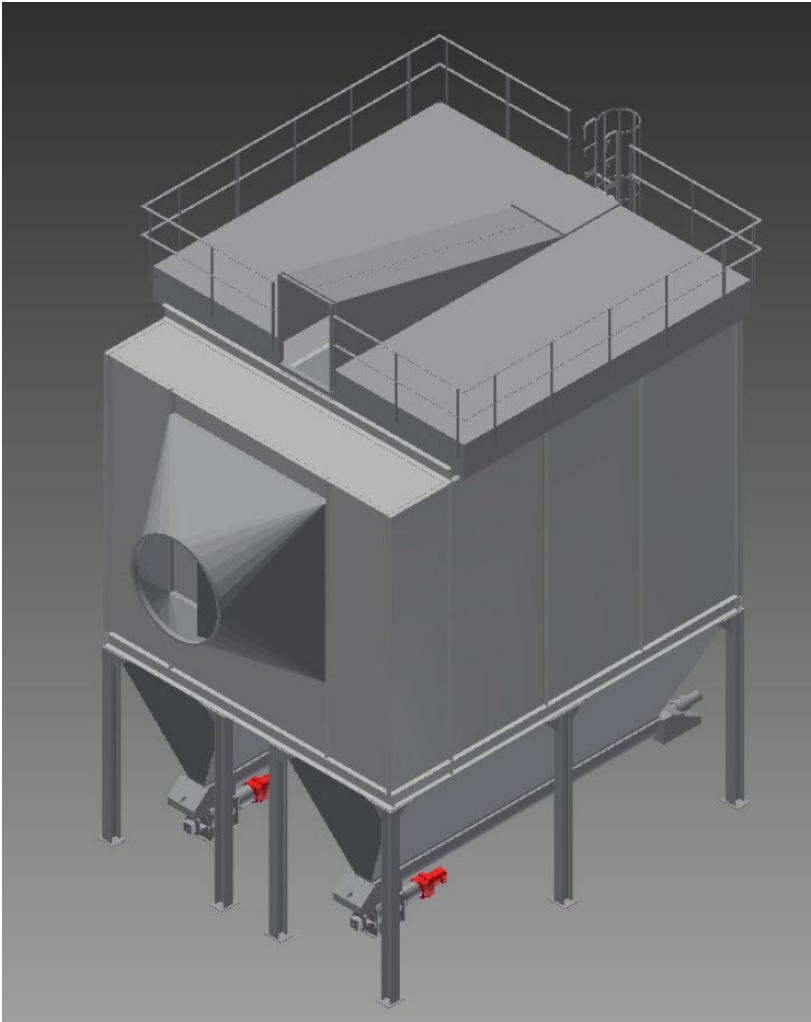


- safety device for support cages and clean gas access doors
- also as type KJSW with 7 sections

Refitting E-Filter 200,000 m³/h – KJSB 35/07-81.1/60



- 14 filter heads type 35
- 81 filter bags per section
- total 1,064 filter bags
- filter bags length 6,000 mm
- 3,206 m² filter surface



Special Application Special Application

Water vapour filter

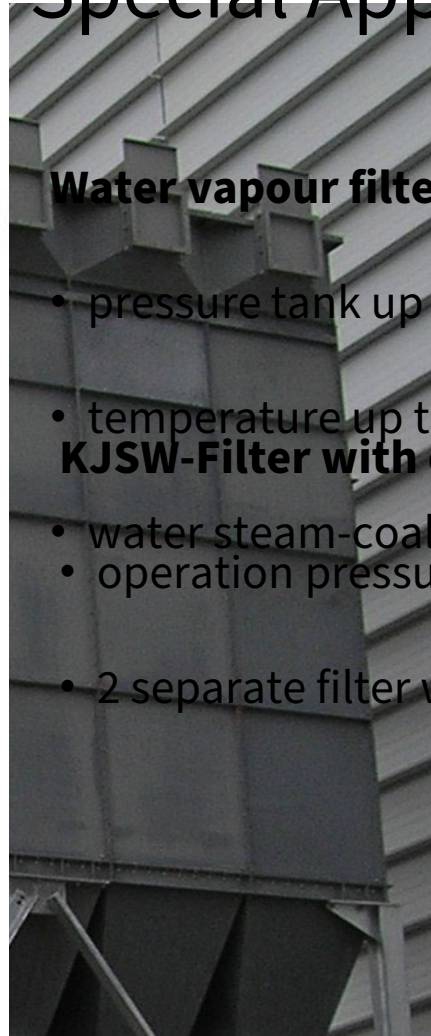
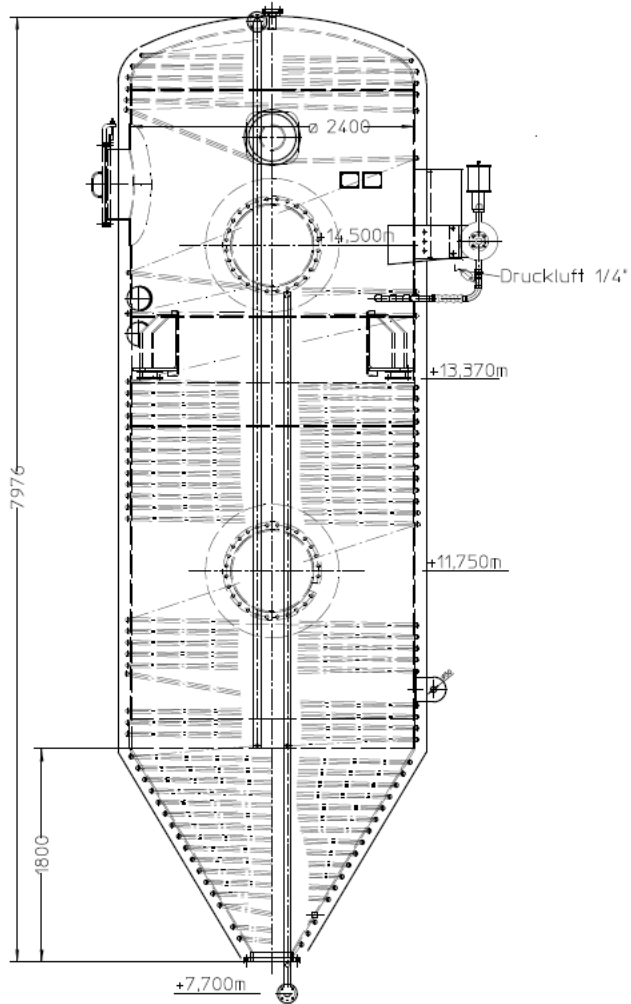
- pressure tank up to 10 bar
- temperature up to 180°C

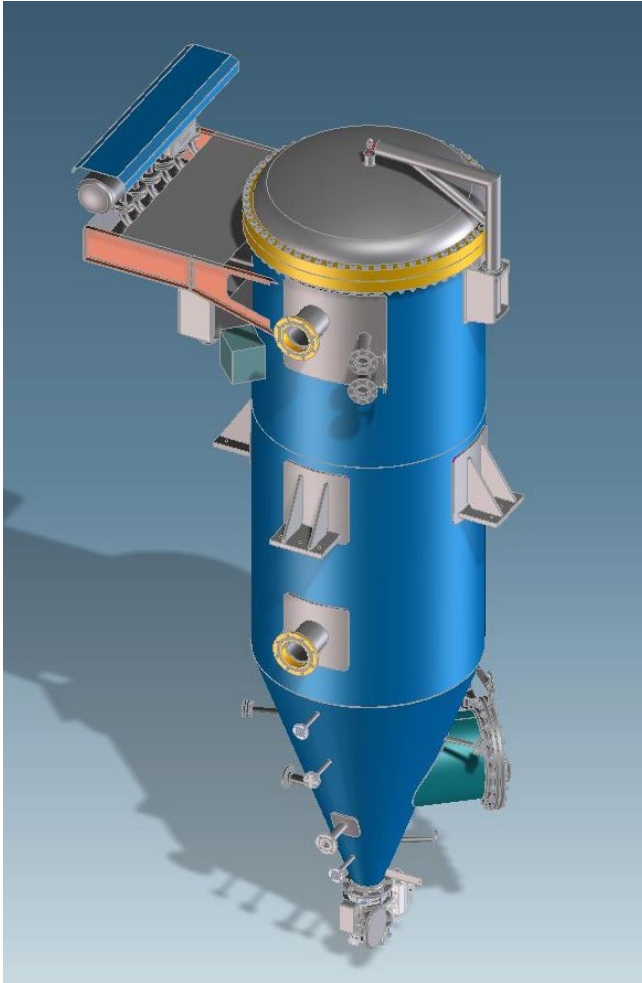
KJSW-Filter with dividing wall

- water steam-coal dust-mixture
- operation pressure 50 mbar(g)

KJSK-Filter

- 2 separate filter with 3 sections each
- Online cleaning possible
- each section with dividing wall and hopper





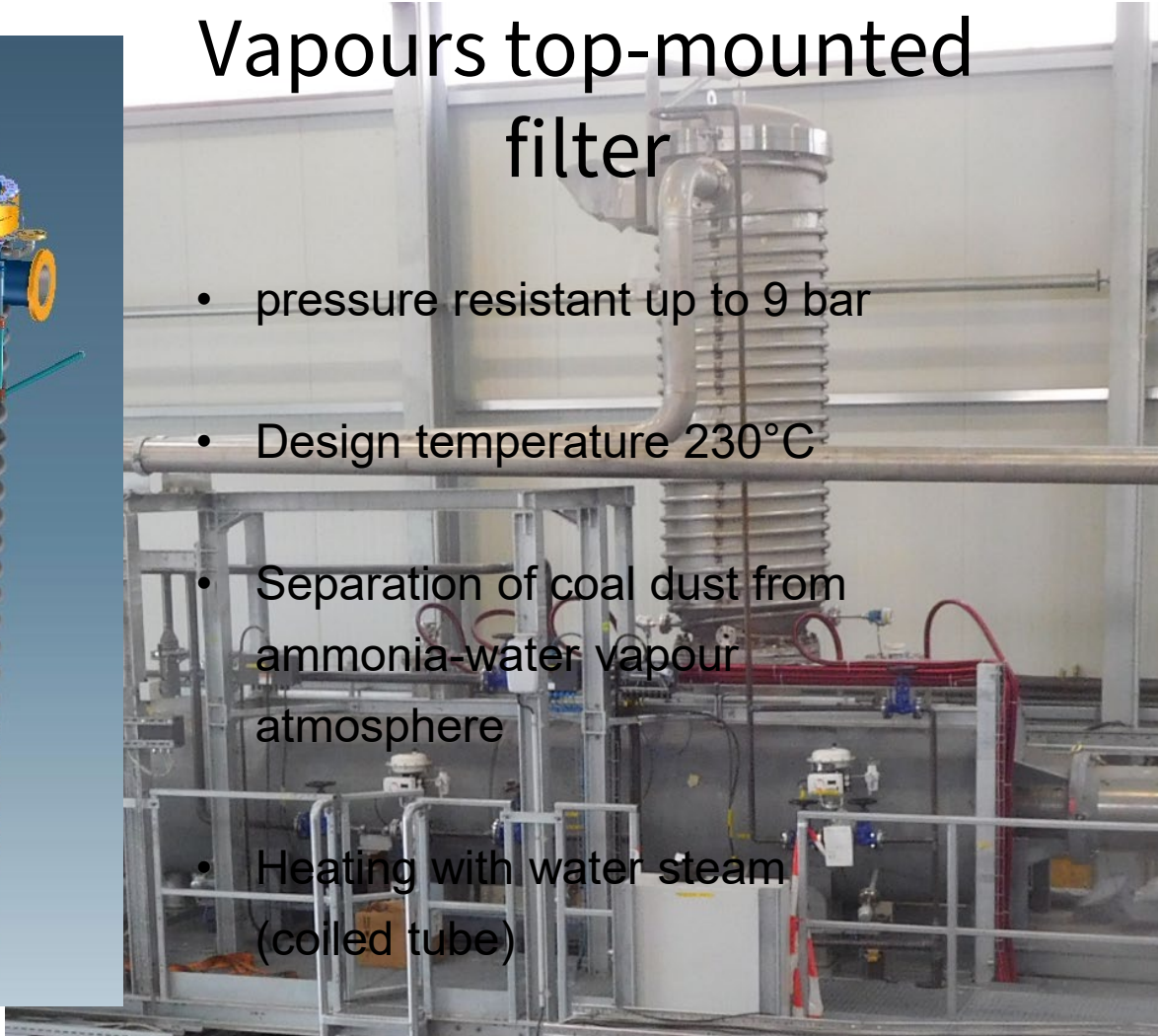
Hot-gas Cartridge filter

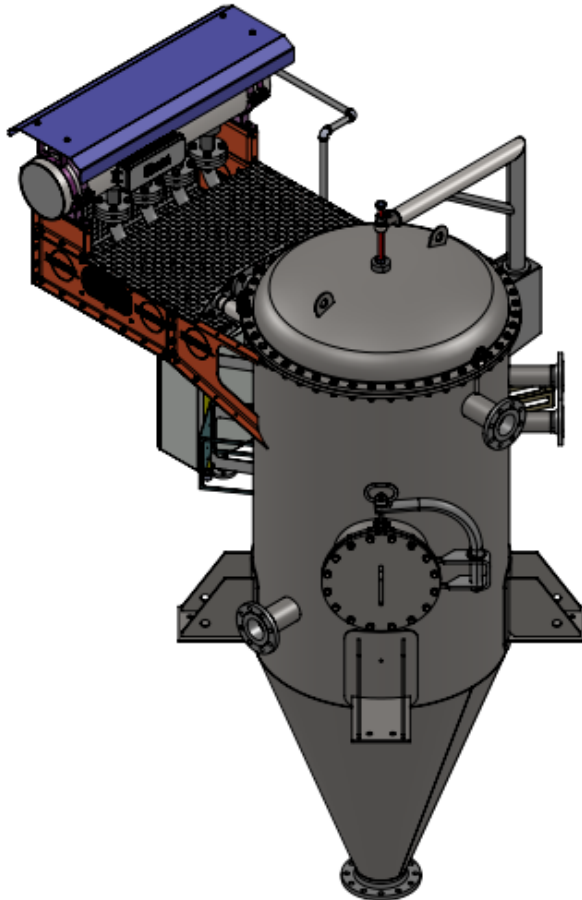
- Project Chemicals industry
- Combination pressure vessel 7 bar and ATEX-roundfilter
- Design temperature 390°C
- Separation of metal dust and metal oxide at catalyst production with H₂-atmosphere
- thermal decoupling cleaning system



Vapours top-mounted filter

- pressure resistant up to 9 bar
- Design temperature 230°C
- Separation of coal dust from ammonia-water vapour atmosphere
- Heating with water steam (coiled tube)

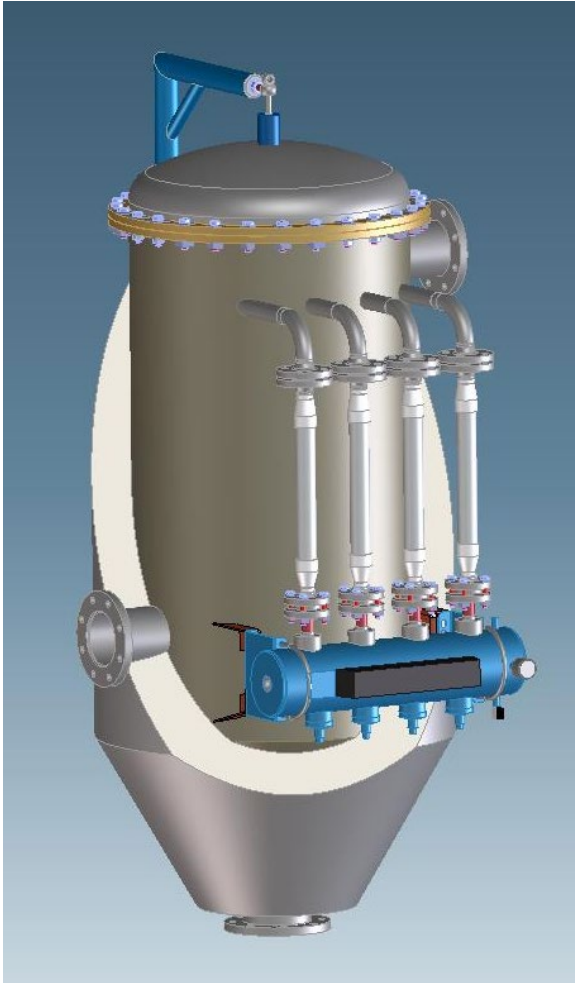




Hot gas filter

- Temperatures up to 380°C
- Dust separation from ammunition demilitarisation by ceramic cartridges
- Thermal decoupling cleaning system

Hot-gas Filter



- Temperatures up to 750°C
- Dust separation by ceramic cartridges
- thermal decoupling cleaning system

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Thank you for your attention

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