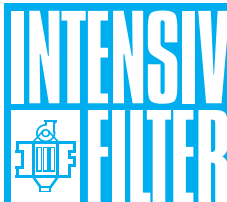


P r o d u c t i n f o r m a t i o n

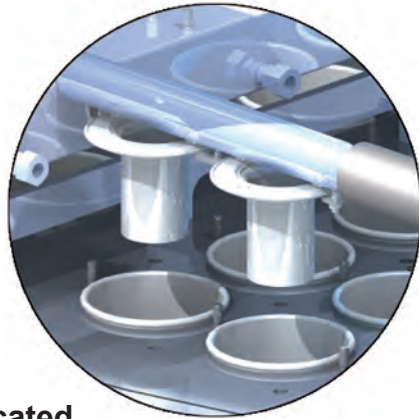
ProJet CIP[®]

Cleaning in place filter up to 8 m bag length



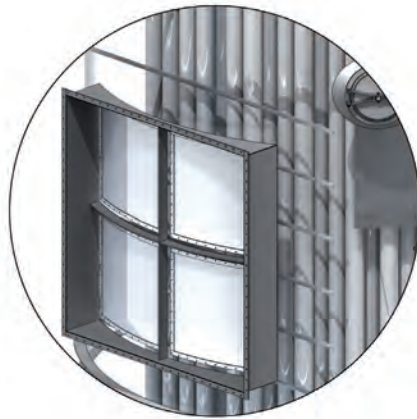
DUST REMOVAL TECHNOLOGY + FILTRATION

ProJet CIP®



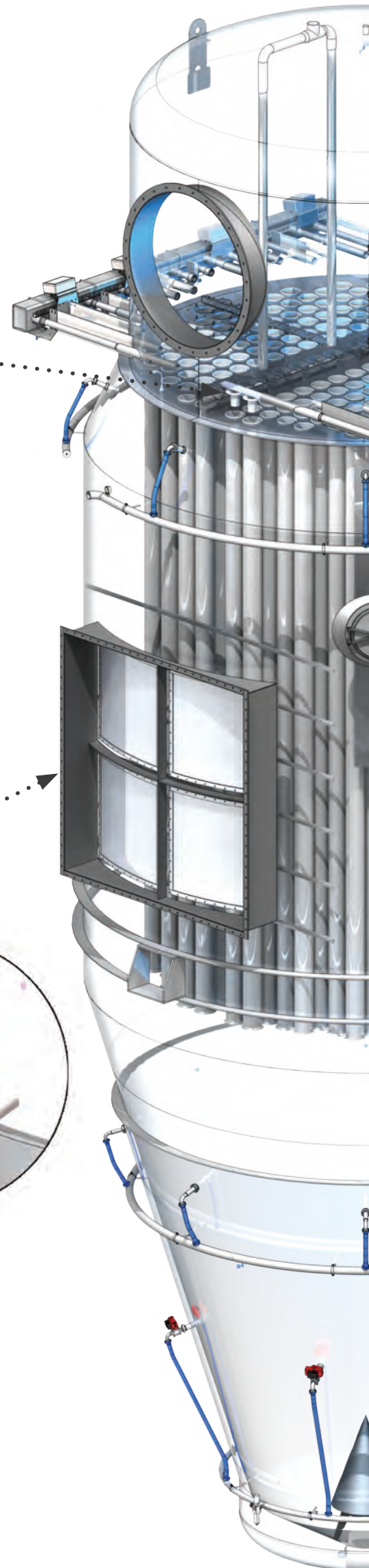
Efficient and Sophisticated

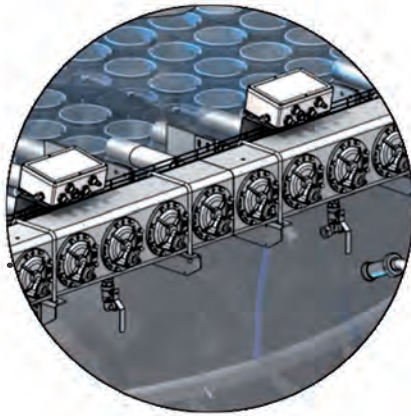
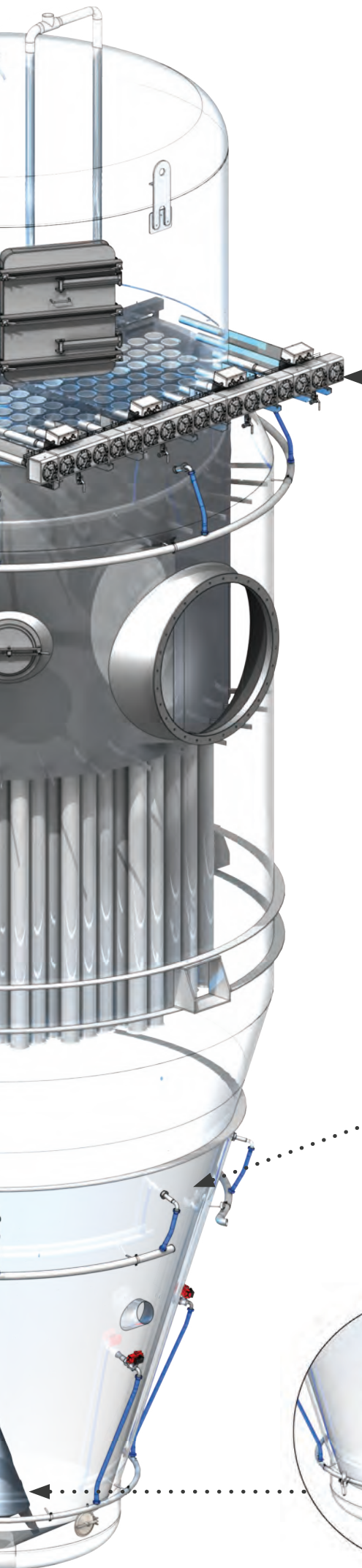
- Complying to high hygienic requirements
- CFD optimized design
- Maximum cleaning intensity
- Precision „Made by Intensiv-Filter“



Safe and Reliable

- Explosion pressure shock resistant for reduced explosion pressure (0.04...0.1 MPa)
- Explosion pressure relief by using rupture discs
- Effective restraint system for the safety of the CIP filter
- Decoupling via extinguishing barrier
- Explosion suppression as an alternative to explosion pressure relief



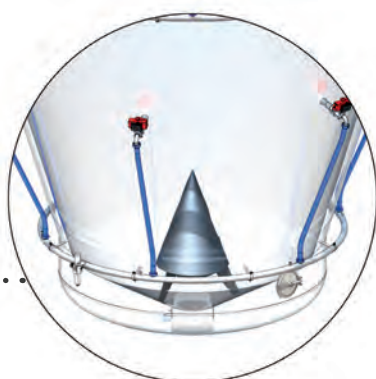
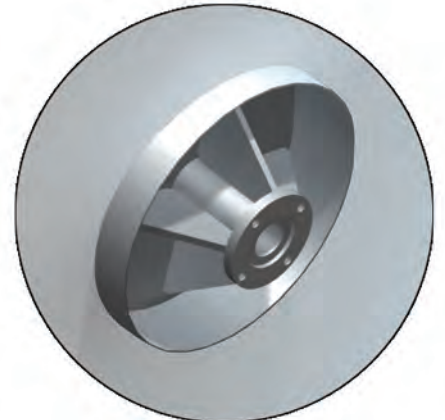
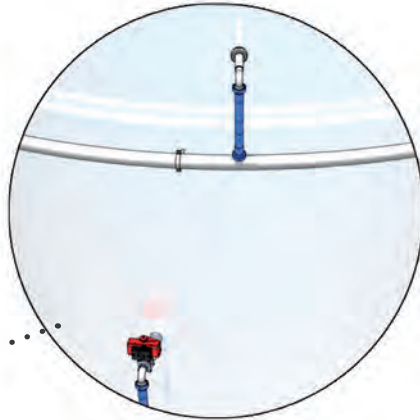


Energy efficient and Powerful

- Fully automatic cleaning system
- Minimum filter differential pressure
- Reduced compressed air consumption

Clean and Hygienic

- Wall cleaning system either with nozzles or knockers
- No risks of dust caking or depositing
- Cyclically controlled cleaning

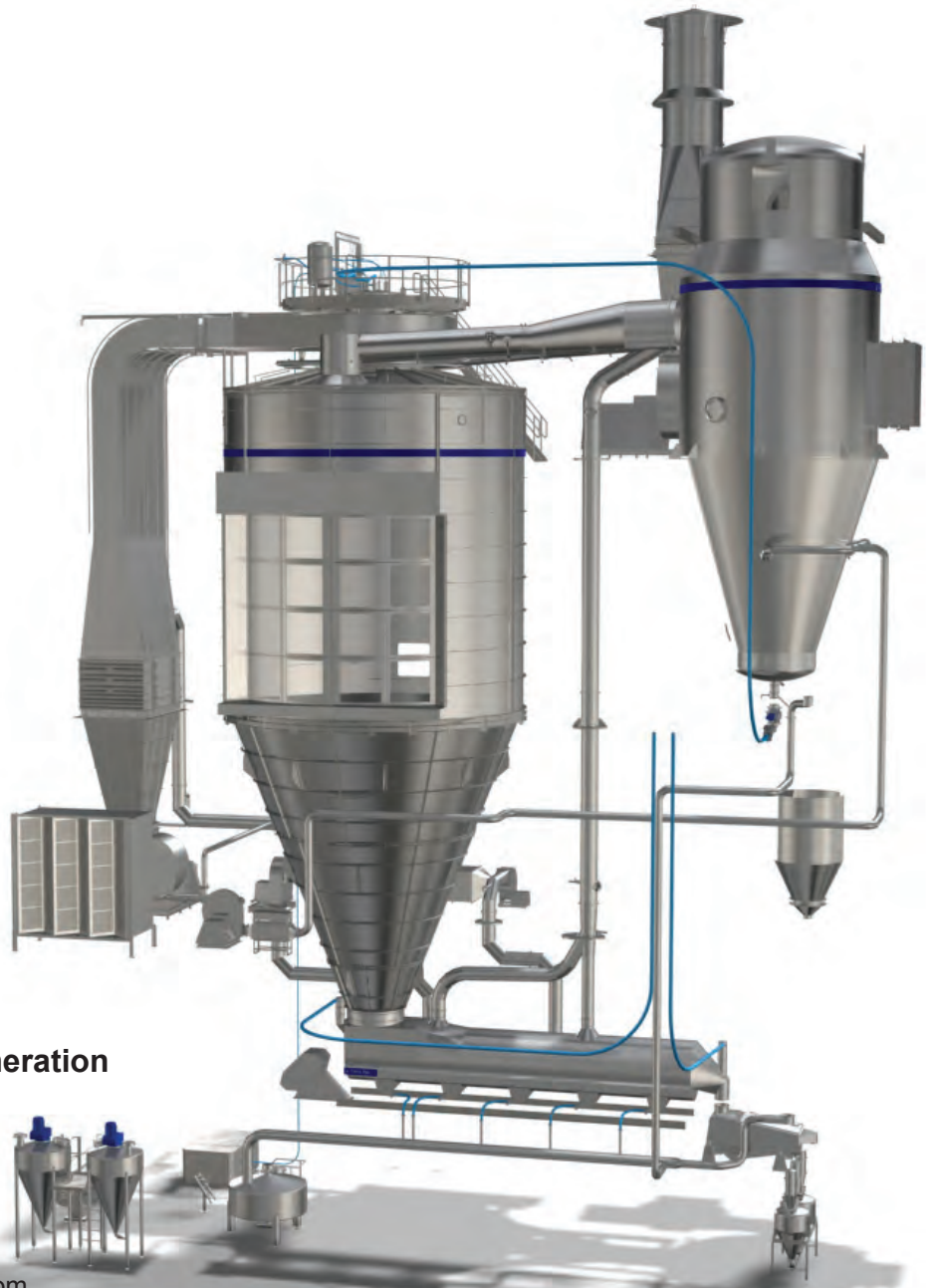


Economical and Thorough

- Product discharge released by heated fluidised bed
- Heated cone prevents caking

Design features of the new generation ProJet CIP®

- Optimised geometry with a clearly diminished upstream velocity between the filter bags
- Bag length to 8 m
- Reduced number of installation parts due to longer filter bags as well as reduced air pressure and CIP washing liquid
- Newly developed clean gas chamber under hygienic points of view
- Reduced installation parts in the clean gas area and with it short maintenance time
- No special tools are necessary for the assembly/dismantling, maintenance and service
- Equipment with ProTex CIP filter media which were optimised especially on perfect washability, short drying times and an excellent cleaning.



Advantages of the new filter generation

- Reduction of
 - ✓ footprint
 - ✓ mounting parts
 - ✓ rinsing fluid up to 30 %
 - ✓ volume flow on the discharge bottom
 - ✓ product loss
 - ✓ elutriation velocity
- Optimized distribution of the volume flow
- Enhanced particle sedimentation behavior



Coanda Injector

Jet-pulse injector technology and cleaning control system

The injector system which generates the jet-pulse for filter media regeneration is of crucial importance for the energy efficient operation of a bag filter installation. This is why Intensiv-Filter has developed and patented the Coanda Injector. This utilises the Coanda effect, where the jet follows a curved surface. This gives maximum intensity cleaning and at the same time efficiently separates the filter cake from the filter medium.

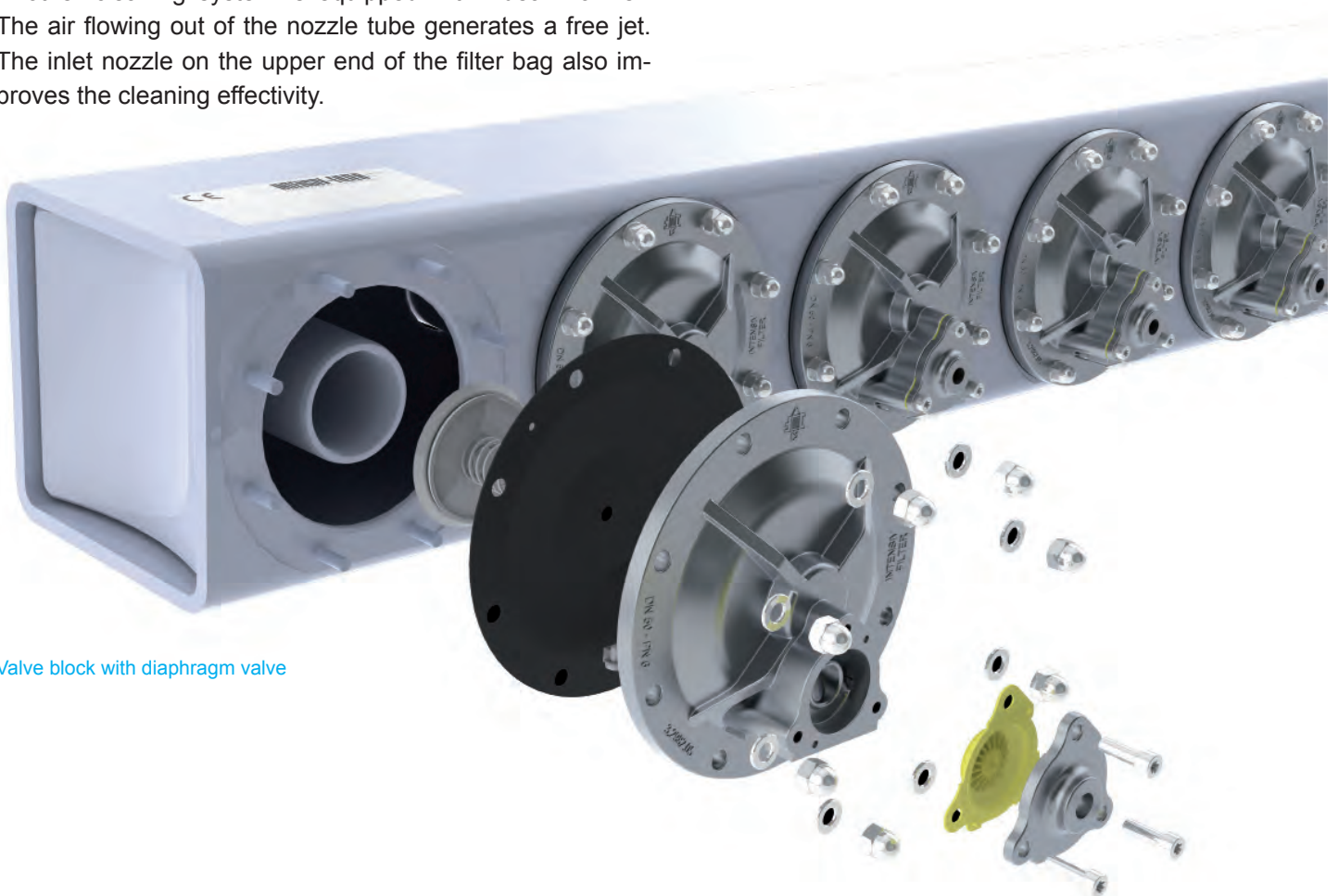
Operating principle

During cleaning a focused jet of compressed air flows out of a annular gap of the Coanda Injector where it is channeled over a curved surface. The primary air (compressed air) follows the boundary layer, which does not break away from the wall due to the geometry of the Coanda Injector. A strong vacuum is generated inside the Coanda Injector (first injector stage). This sucks in secondary air and forms a propulsion jet. The propulsion jet enters the inlet nozzle in the upper area of the filter bag (second injector stage) and sucks in further secondary air. The filter bags are briefly inflated, the filter cake breaks off due to the impulse transfer and the flow direction is briefly reversed.

Another cleaning system is equipped with "Ideal Nozzle". The air flowing out of the nozzle tube generates a free jet. The inlet nozzle on the upper end of the filter bag also improves the cleaning effectivity.

Advantages of the Coanda injector

- ✓ Maximum cleaning effectiveness
- ✓ Large amounts of reverse air can be sucked in
- ✓ Low mechanical stress of the filter bag
- ✓ Optimum and economic cleaning
- ✓ Reduction in emissions
- ✓ Extended service interval

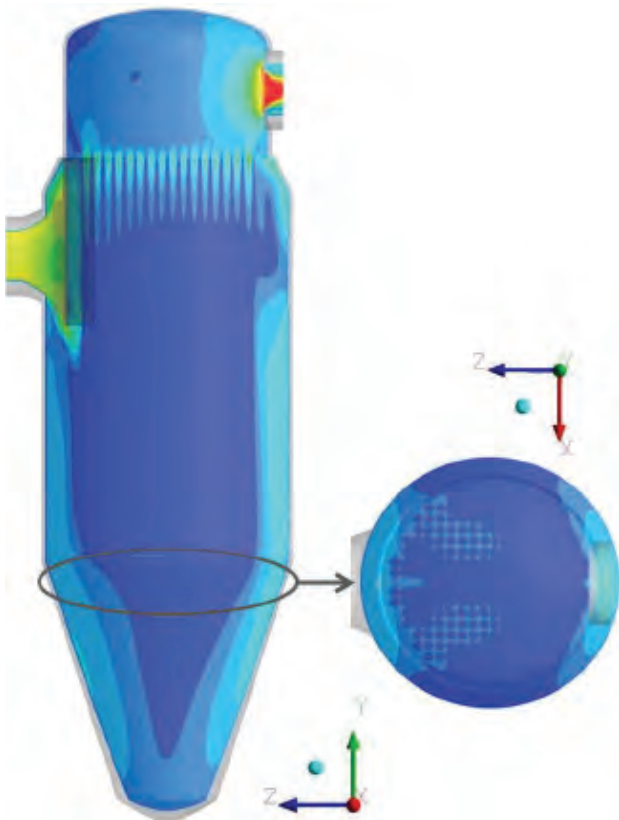


Valve block with diaphragm valve

CFD supported flow optimisation

Operating parameters such as flow speeds, temperatures and pressures can be displayed with utmost accuracy and evaluated using CFD (Computational Fluid Dynamics). The fluid flow of plant components of the ProJet CIP® series was analysed using CFD simulation. These calculations made it possible to optimise the gas flow, the calculation results prevented dead zones and resulting pressure losses. In addition to gas flow optimisation, particle trajectories have been analysed and improved. Uniform charging of the filter media guarantees efficient dust removal.

CFD is a powerful tool for filtering installation engineering. Intensiv-Filter performs these simulations in-house. It is therefore possible to answer questions relating to fluid flow far more quickly. In addition to process engineering and constructional project work during the design and realisation of industrial dust removal installations, CFD also serves as a tool for fundamental developments. Through this, Intensiv-Filter can, from emission source to chimney, strengthen its core competence in the development of energy efficient filtering installations and installation technology.



CFD analysis of the new generation ProJet CIP®

Your benefits from the CFD optimised ProJet CIP® filter

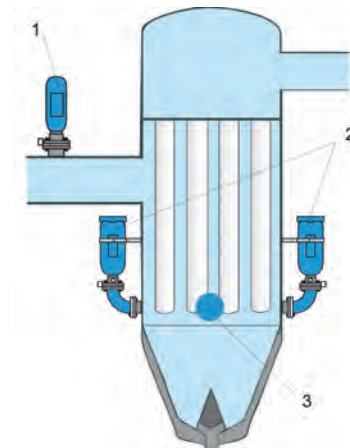
- Uniform filter bag inflow
- Uniform velocity distribution
- Minimisation of the upward flow between the bags
- Significant reduction of filter resistance
- Reduction of the differential pressure
- Reduction in operating costs

Explosion protection with rupture disk and restraining system

- Explosion pressure shock resistant for the reduced explosion pressure (0.04...0.1 MPa)
- The explosion is dissipated in a controlled manner by using rupture discs
- An effective restraint system is used for the safety of the CIP filter
- Decoupling about extinguishing agent block

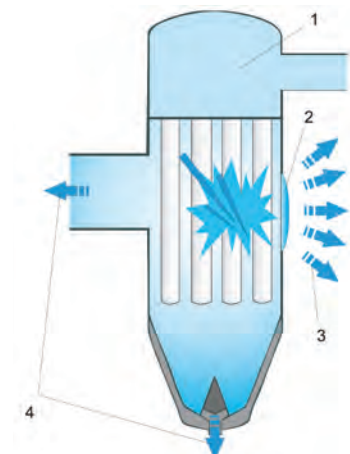
Explosion pressure discharge with explosion suppression

- Explosion pressure shock resistant for the reduced explosion pressure (0.04...0.1 MPa)
- A special extinguishing agent is suddenly introduced into the developing explosion cloud and inerting the filter
- The signal for the activation of the extinguishing agent container is transmitted via highly sensitive pressure sensors or/and infrared detectors
- Decoupling about extinguishing barrier



- 1 Decoupling about extinguishing barrier
- 2 Extinguishing barrier
- 3 Pressure sensor

Explosion suppression



- 1 Clean gas area, no explosion spread (dust concentration under explosion limit)
- 2 Burst discs
- 3 Spread of pressure and flame (safety zone surrounding pressure relief devices)
- 4 Spread of pressure and flame

Explosion relief venting

All over the world, leading operators and plant engineers trust in filtering installation of Intensiv-Filter



CIP filter for a spray dryer with a volume flow of 148.000 m³/h a.c.



Assembly of the CIP filter for de-dusting of a spray dryer with a volume flow of 217.000 m³/h a.c



Assembly of the CIP filter for the world's largest spray dryer



An exceptional transport of a CIP filter



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