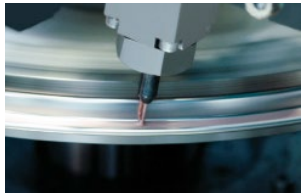
Filtration Group application example – Air filtration (FE)

Filtration Group dedusting unit in pressure-shock resistant design Explosion suppression

Factory Equipment

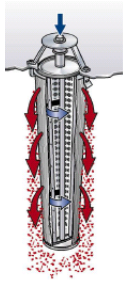
Initial situation

Our customer is a family business, that successfully develops and manufactures and markets adhesives and sealing compounds for the metal packaging industry. During the production of adhesives, different additives like resins, wax or further components are added to polymeres. Sticky dusts are created during this process with a minimum ignition energy < 3 mJ, which has to be extracted. For this kind of application, normally dust removal filters in explosion-proof design with explosion release are used. Resin dust arising on manual workplaces are exhaused by **Filtration Group dust removal filter type SFR-09 008 DN-150 S1S SL**.



Solution statement

- For this particuar application, Filtration Group uses a dust removal filter in explosion-proof design with explosion release.
- At the start of an explosion, the pressure increase is recorded by two separate pressure sensors and the extinguishing agent bottles are activated by the high-speed electronics.
- Inside the dust removal filter, the flame is suppressed by the extinguishing agent, so that the explosion pressure will be reduced. At the same time, the signal from the switch box disconnects all electrical components.
- Gentle and improved cleaning of the filter cartridges and protection of the filter material by the use of filter aid HI 26, which is blown into the row gas via an injector nozzle. (Filtration Group dosing device SDG-100).



Customer value

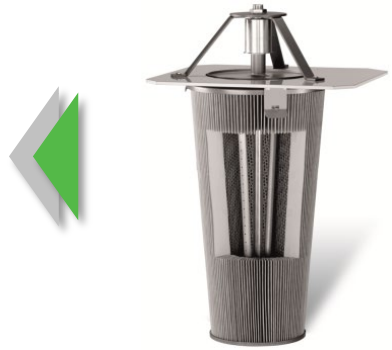
- Dedusting plant with constructive explosion protection can be installed in the hall. In comparison to a pressure shock resistant dedusting device with bursting disc discharge, no further measures need to be taken for the safety of the employees and the environment.
- Longer element service life due to the use of filter aids HI 26
- Cost-effective solution of explosion decoupling in comparison to existing systems
- Optimum flow conditions in the filter chamber due to the use of conical filter elements

Challenge

Dust removal filter in explosion-proof design with explosion release for inside installation. Application with an constructive explosion protection by using a relieve valve in order to provide the explosion decoupling for the dust removal filter without endangering the environment. Removal of sticky dusts. Compact and space-saving design has been required.

Technical Data

- Volume flow: approx. 6.000 m³/h
- Kind of dust: colophony: dry, free-flowing, flammable and difficulty soluable in water for a minimum ignition energy < 3 mJ (KsT-value: 255 bar/ms/s);
- Operating temperature: max. 40 °C
- Residual dust content: < 5 mg/m³
- Cleaning by Filtration Group rotating wing (RLK)
- Dust filter cartridges: 9 x 852 032 Ti 08-12
- Filter material: Ti 08, electrical conductive filter material with a total filter surface of 108 m²
- Installation of the filter in zone 22
- Resin dust, free-flowing with the use of filter aid



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