

Filtration Group Application example - Chemical industry

Dedusting unit for fibrous and light dusts in the production of polyethylene nonwovens



factory equipment

Initial situation

In the production of nonwoven fabric made of polyethylene produced during production dusts and fibers that must be separated from the existing gas atmosphere. The occurring dusts are very light and fine and provided with a fiber content, which results in high filtration requirements. Since the gas present in combination with oxygen is extremely explosive, it must be ensured that no air is introduced into the system. For this reason, the filter elements can be cleaned only with nitrogen. The dedusting filter have to protect downstream components - such as heat exchangers - from contamination. Plant downtimes due to necessary cleaning work mean enormous costs for the customer due to the associated loss of production.

Solution approach

- A generously dimensioned round filter unit achieves a low filter surface load so that the very light dust can sediment after cleaning and fall off the filter elements.
- Conical filter elements with a reduced filter surface and thus greater pleat spacing, together with the rotating wing used, ensure a satisfactory cleaning result even with these agglomerating fibers.
- Special material selection for seals and other components to ensure resistance to the gas atmosphere.
- Massive flanges and suitable gaskets ensure a nearly gas-tight design even at higher pressures.

Customer value

- Reliable separation of particles and fibers by our filter material equipped with PTFE membrane, which significantly reduces the contamination of downstream components. This reduces the number of plant downtimes due to the need for cleaning, which can increase production time and quantity
- Low-maintenance filter system ensures trouble-free continuous operation.
- By using our FG Quick-Lock system, we enable the customer to change filter elements quickly and without tools, which can shorten the duration of plant downtime for maintenance. Insertable gratings allow a more comfortable replacement of the filter elements.

Challenge

The occurring dust must be reliably separated in order to protect the downstream components. At the same time, efficient cleaning of the dusts must ensure continuous operation without the need for maintenance work.

Technical specifications

- Dedusting unit SFR-09 024 DN-240 S6. S1.. KA:
Painted filter housing with a diameter of 2.4 meters, a height of approx. 5 meters and a total weight of 6.2 tons
- 24 filter elements 852 032 Ti07 / 1 - 7.5:
Conical Quick-Lock elements for tool-free element replacement with electrically conductive polyester fleece with PTFE membrane
- Gentle and very efficient cleaning of the filter elements with compressed air via conical rotating wings



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