

## Process: Manufacturing of technical plastic parts



### The Task

Within the process of manufacturing plastics dust with a wide range in particle size distribution is generated during the production steps cutting and grinding. The dust particles may even be inflammable depending on the composition of the processed plastic material and the containing resins. Due to the dust's diverse particle size distribution the filter unit must cope with a high dust loading and also meet the demands for maximum separation efficiency of finest dust particles.

Cutting and sawing is done independently at different production cells with a varying work load. Thus, the economical optimum air flow is also strongly varying. The design of the filter unit must follow this demand.

Furthermore, the enormous heat losses and waste of energy (fuels) during winter period which are caused by the exhaust of large air volumes out of the production facility shall be avoided as far as possible.

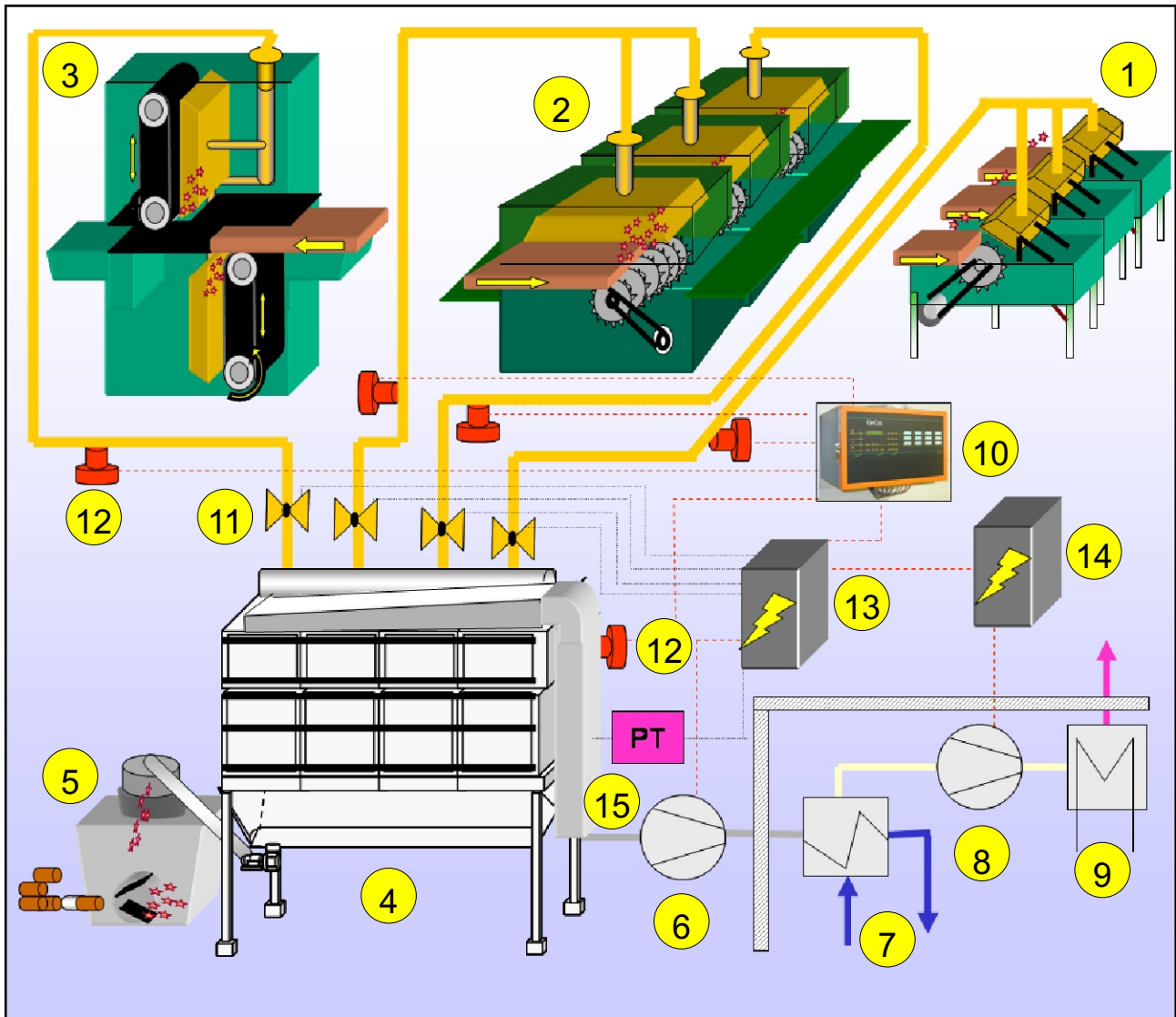
### The Solution

#### Herding® Filter Unit DELTA<sup>2</sup>Sys 1500-192/9 GRTZ with fire detection system

##### Technical Features

- ⇒ Air flow: 50,000 m<sup>3</sup>/h expandable up to 60,000 m<sup>3</sup>/h
- ⇒ Dust discharge through screw conveyor and rotary air lock
- ⇒ Compressing of the separated dust by a pelletizer installed after the filter unit
- ⇒ Consistency of < 1 mg/m<sup>3</sup>
- ⇒ Reliable and cost-effective dust removal by application of the DELTA<sup>2</sup> elements
- ⇒ Operational safety by fire detection system
- ⇒ Connection of the clean gas duct to a heat recovery system to save energy
- ⇒ Pressure-driven frequency controlled fans for an automatic and continuous adjustment of the air flows (exhaust and fresh air supply) which are currently needed. Thus, resulting in an annual cost reduction of fuels and energy by a five-digit number.

Manufacturing of technical plastic parts ...  
... and the solution to the dust problem



- 1 Circular saw bench
- 2 Cutting of plates
- 3 Grinding machines
- 4 Filter unit DELTASys 192/9 GRTZ
- 5 Dust pelletizer
- 6 Fan
- 7 Rotary heat exchanger
- 8 Fan, fresh air supply

- 9 Gas-fired heating
- 10 Fire alarm center
- 11 Gate valve
- 12 Spark detector
- 13 Control cabinet with frequency control, filter unit
- 14 Control cabinet with frequency control, fresh air supply
- 15 Pressure transmitter

Herding GmbH Filtertechnik  
August-Borsig-Str. 3  
92224 Amberg/Germany

Telefon: +49 (0) 9621 / 630-0  
Telefax: +49 (0) 9621 / 630-120  
info@herding.de  
www.herding.com