

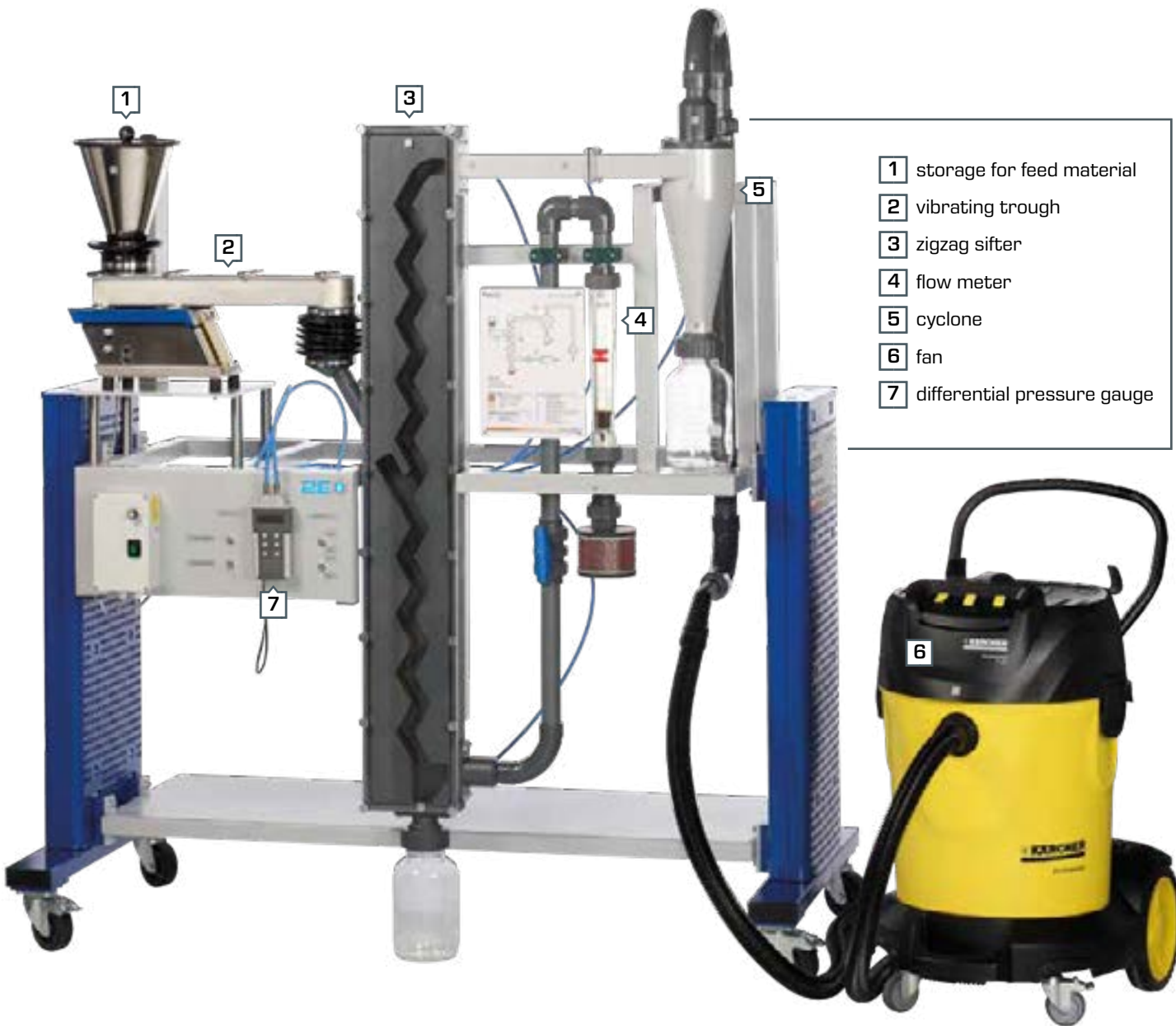
# CE 275

## Gas flow classification

### Gas flow classification with zigzag sifter: a mechanical separation process

Gas flow classification is a mechanical separation process from the field of conventional process engineering. In waste management, this process is used for the separation of various wastes, for example, to separate dust, sand or non-reusable materials from reusable materials. This is mainly achieved by the use of zigzag sifters.

This teaching unit is perfectly suited to teaching the theoretical fundamentals of this process, clearly and practically. The main element of CE 275 is a 20-stage zigzag sifter, which is equipped with a transparent cover. This allows you to observe the separation process in the zigzag channel over the entire height.



- 1 storage for feed material
- 2 vibrating trough
- 3 zigzag sifter
- 4 flow meter
- 5 cyclone
- 6 fan
- 7 differential pressure gauge

About the product:

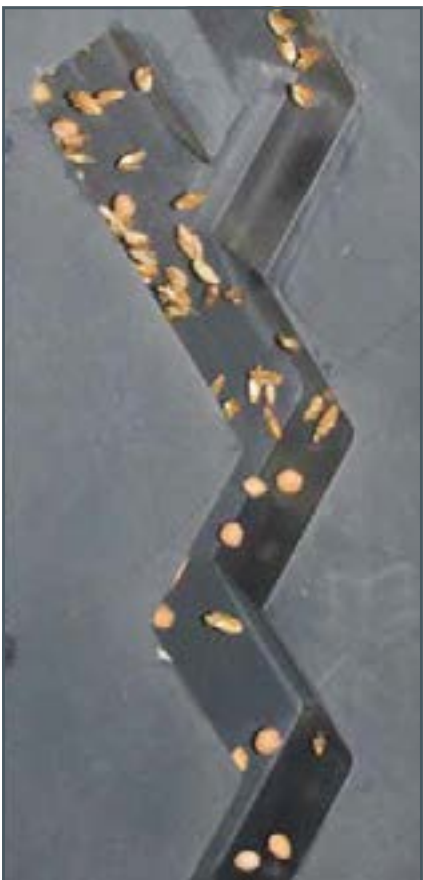


### Principle of operation

The waste mixture to be separated (feed material) is conveyed evenly into the zigzag sifter by a vibrating trough. The fan generates the upwardly-directed airflow necessary for separation through the zigzag channel. You can adjust the mass flow rate of the feed material and the volumetric flow rate of the air. The fraction of the feed material transported along with the air is then separated in a cyclone. This allows a closed circuit for the air flow. The zigzag sifter and cyclone are each equipped with differential pressure measurement.



CE 275 during a trial run:  
The vibrating trough evenly conveys the mixture of spelt husks and cherry stones to be separated from to the zigzag sifter.



In the zigzag channel,  
the separation of the mixture  
can clearly be observed.

This device has been developed by our experienced engineers in collaboration with the Institute of Mechanical Process Engineering at the Anhalt University of Applied Sciences (Germany).

**Hochschule Anhalt**  
Anhalt University of Applied Sciences

### Recommended accessory



We recommend our CE 264 Screening Machine for analysis of the experiments.

### Learning objectives

- familiarisation with the basic principle of gas flow classification
- influence of the mass flow rate and the airflow rate on
  - ▶ fine material fraction
  - ▶ quality of separation
  - ▶ sifter pressure loss
  - ▶ cyclone pressure loss
  - ▶ fraction balance
  - ▶ separation function
  - ▶ separation size
  - ▶ sharpness of separation

with  
CE 264