

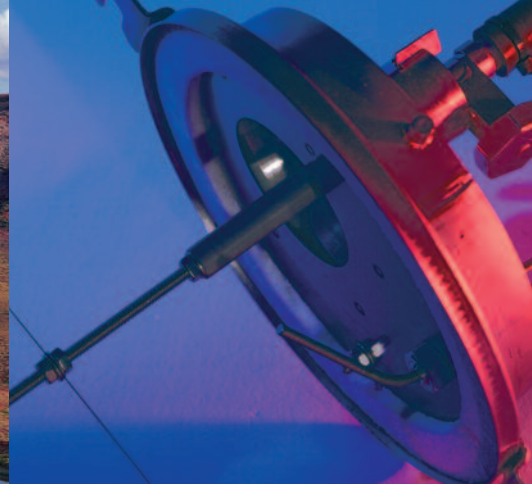
# The particle separator KW Zumik®on

Reduces particulate matter by up to 90 %

In Germany, subsidised with  
500,- Euro according to  
BAFA promotion ([www.bafa.de](http://www.bafa.de))

## PRODUCT DESCRIPTION





## Zumik®on very efficiently reduces particulate matter for small wood firing.

### The particle separator KW Zumik®on

#### What is particulate matter?

Particulate matter consists of tiny particles with a diameter of less than one hundredth of a millimetre, which is about one tenth of the diameter of a human hair. A considerable part of these particles, which are also called PM10, is emitted through combustion processes. Industry, traffic and heaters are mostly responsible for their creation.

Due to their small size and their chemical composition, they are a danger to our health. The particulate matter enters deeply into our lungs and causes a variety of diseases, from a chronic cough to lung cancer. Just imagine: In strongly exposed areas, a person inhales about 50 million particles with each breath!

#### Late awareness

The problem of particulate matter in the atmosphere is not a new one, but only in recent years have people become aware of its impact on public health. It mainly concerns areas with high population and traffic density as well as regions in which topography and climate forward the accumulation of particles in the atmosphere.

#### Constant violation of limits

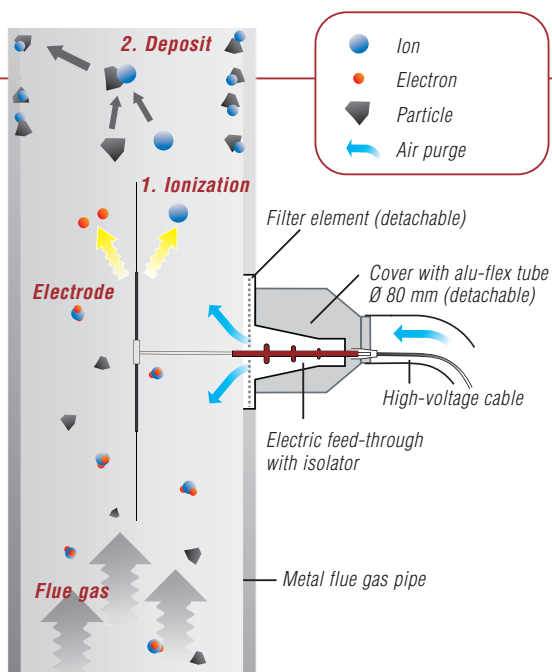
The European Union and Germany have stipulated limits for the PM10 concentration in our atmosphere: the limit for the annual mean in the EU is 40g/m<sup>3</sup>. In addition, the daily limit of 50g/m<sup>3</sup> must only be exceeded once, or 35 times (EU) respectively. Unfortunately, these limits are violated all the time, as numerous measurements show, and therefore a part of the population constantly inhales too much harmful particulate matter.

#### Wood fire also contributes to the particulate matter problem

Wood fires also emit particulate matter. They are not the most important cause for the particulate matter problems in the point balance. However, in areas with high numbers of old facilities and inaccurate behaviour of operators, the particle emission of such facilities can also influence the local PM10 load during the cold season.

#### Zumik®on – first particle separator for small wood stove firing

After intensive research and extensive testing with recognized testing institutes (e.g. TÜV Süd), Kutzner + Weber was able to start the production of a first pilot run in autumn. In 2006, the first wood firings were fit or refit with an electrostatic particle



1. A sufficiently high voltage on the electrode in the centre of the flue gas stream causes an ionization process. This creates charged particles, so-called charge carriers, and gas ions in the flue gas stream.
2. The gas ions bond with the particulate matter and charge it. Electronic powers push the charged particles to the inner surface of the flue gas pipe where they deposit. The charge of the particles is "neutralised" during the deposition process. In spite of this the particles remain stuck at the flue gas pipe due to their mechanical indentation.

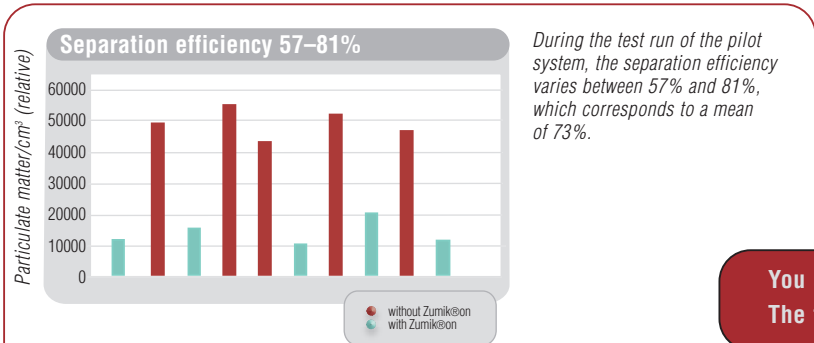
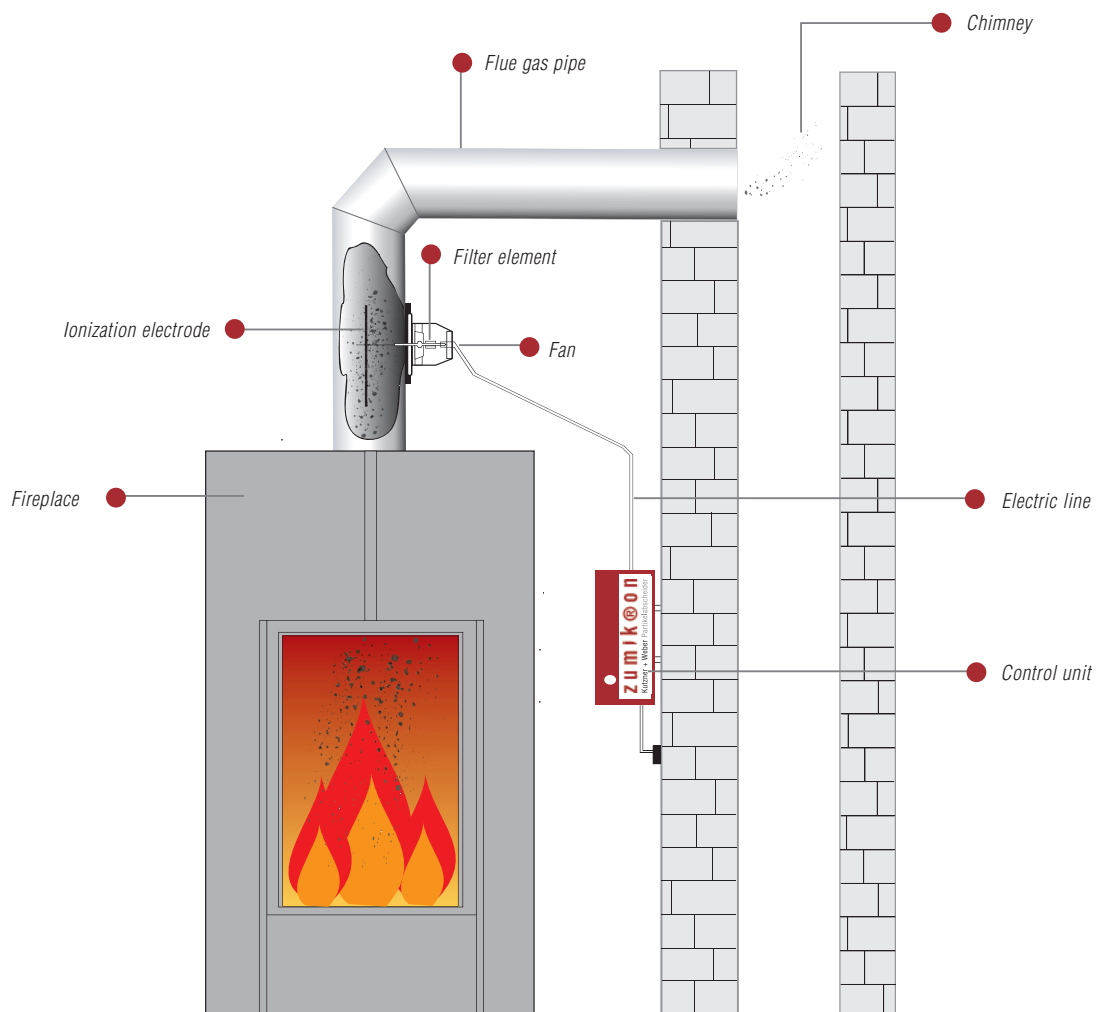
separator. The good test results were also confirmed in the test market. Systems that had been fit with a particle separator reached separation effects of about 50–90%.

**For stoves, open or closed combustion chambers and wood-charged boiler plants**

The principle of the electrostatic particle separator Zumik@on is universal and can be used for most small wood firing plants regardless of brand and system. The particle separator is suitable for wood firing plants with a performance range of up to about 40 kW and a flue gas pipe diameter of 130 mm to 300 mm.

**Advantages:**

- ✓ Works in all wood firing plants up to 40 kW
- ✓ Proven efficiency
- ✓ Unproblematic maintenance
- ✓ Can be integrated into existing systems
- ✓ Low operating costs
- ✓ Simple to put into operation and works automatically
- ✓ Electronically tested and approved according to european standards



**You are welcome to contact us for further information. The telephone number can be found on the back!**



# Installation

## Can be installed by many specialized craftsman

Zumik@on can be installed by competent specialized craftsman: such as stove and fireplace manufacturers, heating contractors, chimney builders.

## Requirements for a smooth installation

The particle separator can be integrated into almost any type of wood combustion system as a secondary measure. The following requirements need to be considered for installing the Zumik@on:

- At least 1.5 m of the flue gas pipe behind the particle separator has to be made of metal
- Diameter of flue gas pipe 130 mm to 300 mm
- The filter element has to be accessible after installation, i.e. a service door of at least 30 x 30 cm is required in case of an in-wall installation
- Purge air supply has to be ensured at all times (5 m<sup>3</sup>/h)
- Flue gas temperature below 400 °C (for short terms up to 500 °C)
- Combustion capacity up to 40 kW
- Electrical connection 230 V

## Manageable Technology

Zumik@on mainly consists of three components:

- 1 The filter element with electrode and thermo sensor is mounted on the flue gas pipe as a compact unit, with the electrode being inserted into the centre of the flue gas pipe through a port.
- 2 The supply line is used for routing cables and, in case of in-wall installation, purge air.
- 3 The regulator unit supplies the electrode with the optimum high voltage for the system to ensure an efficient segregation.

All components of the system were integrated "in-wall" into the chimney system and are only visible to the user in form of the front panel of the regulator unit. A service door allows access to the filter element, which always has to be removed when cleaning the flue gas system.



# For an optimum combustion, the stove regulator UNIVERSAL

## Automating the combustion process

Wood firing emits particulate matter, especially when operated incorrectly.

The stove regulator of Kutzner + Weber automates the combustion process and takes care of supervising and controlling all important parameters and components for combustion.

This guarantees an optimum energy utilization.

In addition, the automated combustion optimization offers more safety and maximum comfort.

*The stove regulator creates the best conditions for your wood fire to ensure an efficient and low-emission combustion.*



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