

EXHAUST AIR TREATMENT USING ADSORPTION ECONOMICAL AND EFFECTIVE PROCESSES

EISENMANN OFFERS THE ADSORPTION WHEEL (ADW) FOR THE TREATMENT OF LARGE EXHAUST AIR STREAMS WITH LOW ORGANIC LOAD.

The adsorption process is characterised by significantly lower operating costs compared to thermal exhaust air treatment systems.

In contrast to thermal methods, during the adsorption process there is no chemical transformation of pollutants and no significant increase in temperature. Adsorption uses the property of certain solids (such as activated carbon, zeolite) to capture gases or vapours on their surface.

The adsorbed pollutants are then expelled with a desorption air flow. It is up to 40 times more concentrated and, accordingly, with a much smaller volume. As a result, it can be treated much more cost-effectively.

The Eisenmann adsorption wheel consists of chambers which are concentrically arranged around a shaft. Depending on the application, they contain activated charcoal or zeolite as adsorption material. The exhaust air is directed over the adsorption material. Desorption takes place in a separate section of the rotating adsorption wheel. Hot air is passed across the adsorption material in a countercurrent, and, as a result, the pollutants that were adsorbed are expelled again.

The desorption flow of the adsorption wheel can, for example, be fed to an RTO, a TO, a steam boiler or a CHP plant.

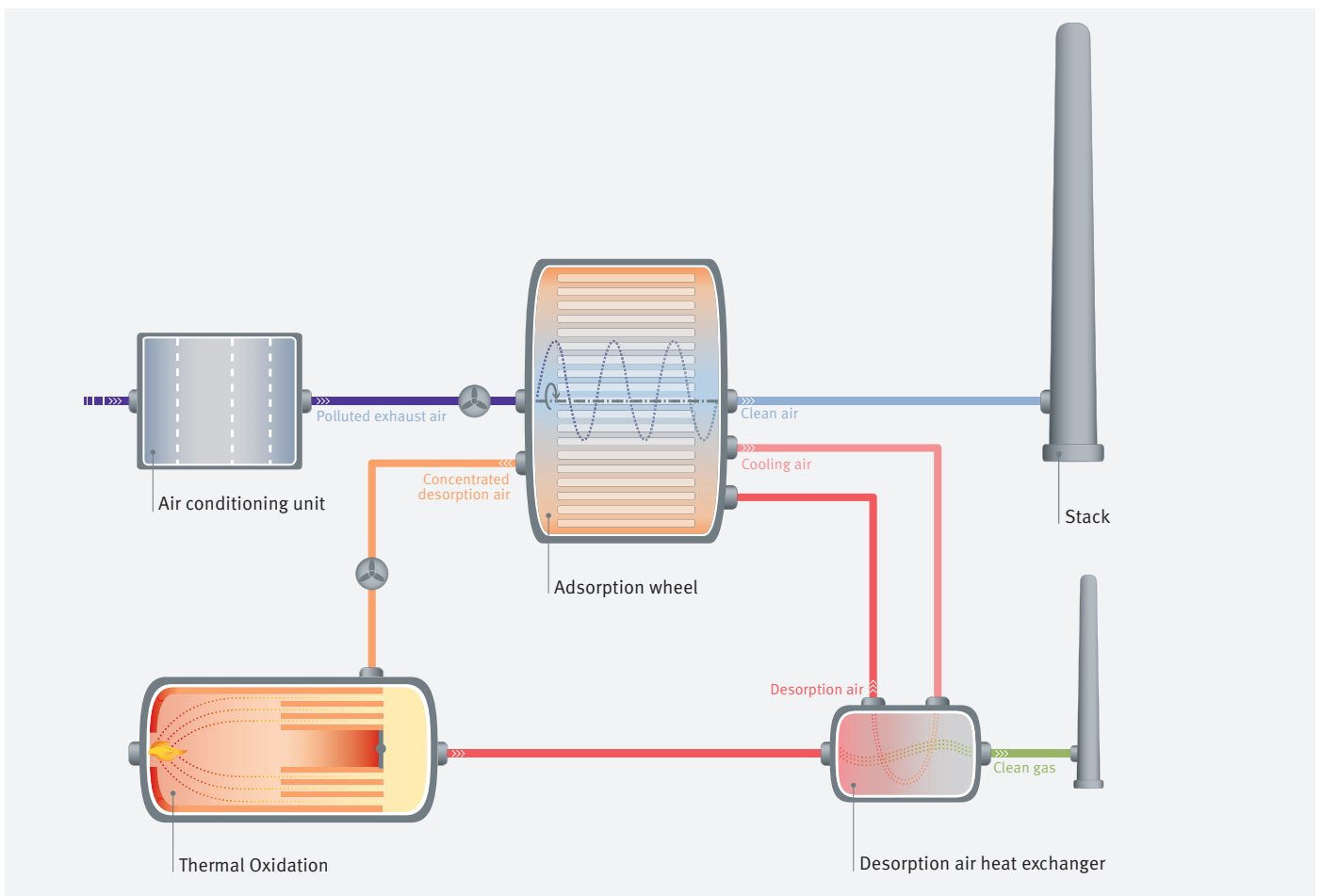
Advantages at a glance

- » Processing of very large exhaust air volumes of up to 200,000 Nm³/h per unit
- » Very high solvent concentration and reduction of volume flow to 1:40
- » Use of primary energy sources such as natural gas is minimised through the high concentration
- » Concentration peaks are buffered due to the high adsorption capacity of the adsorption filling



Exhaust air treatment by adsorption.

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Adsorption wheel with TO.

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