

**DUAL STAGE EXHAUST AIR SCRUBBER /  
CONDENSER**

Cetotec dual stage exhaust air scrubbers offer, especially for larger vinegar fermenters and quantities of exhaust air, the ideal solution for cleaning the air and recovering valuable resources at the same time.

Cetotec condensers can retrieve valuable volatile and aromatic substances from the exhaust air. The recovered liquid is available in concentrated form and can be constantly reintroduced into the fermenter. Condensers are especially recommended for the production of speciality vinegars. For further increasing the yield, condensers can be used in combination with an exhaust air scrubber.

**Description:**

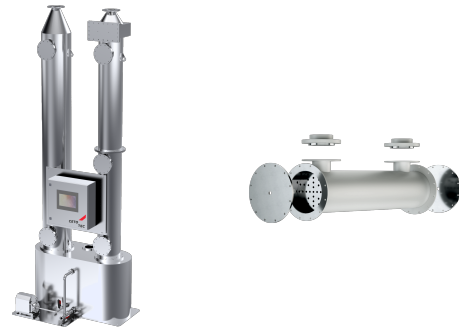
The compact design of the absorber column and absorber reservoir is equipped with a reliable automation system. The exhaust air, consisting of Ethanol and acetic acid is transported through the absorber column and thereby cleaned. By using a dual-stage exhaust air scrubber, the exhaust air is passed through two washing columns in succession, thereby increasing the recovery of volatiles to more than 90%.

**Function:**

The exhaust air scrubber functions on the basis of physical absorption. The resources contained in the exhaust air are washed out of the gas phase and gathered within the washing liquid. The special design of the filling material within the absorber column guarantees a very high surface and therefore leads to an optimal mass transfer during the cleaning. The washing liquid can be used for mash preparation or dosed back into the vinegar fermenter. In case of using the fed-batch process the liquid can be dosed into the fermenter during charge phase.

**Advantages:**

- Recovery of more than 90% of resources in exhaust air
- Reduction of emissions to less than 50 ppm
- Minimization of odor emissions in residential areas
- Droplet separator reliably prevents the outlet of acetic droplets
- Construction completely from stainless steel
- Suitable for both inside and outside installation

**DUAL STAGE EXHAUST  
AIR SCRUBBER /  
CONDENSER****Available sizes:**

Standard sizes: 300 – 4000 m<sup>3</sup> / h air volume.

Exhaust air scrubbers and condensers can be constructed based on customer requirements and tailored to local specifications.