

CT

Catalytic thermal oxidizer



Application field

Average-low capacities; average-high concentrations.

Plant description

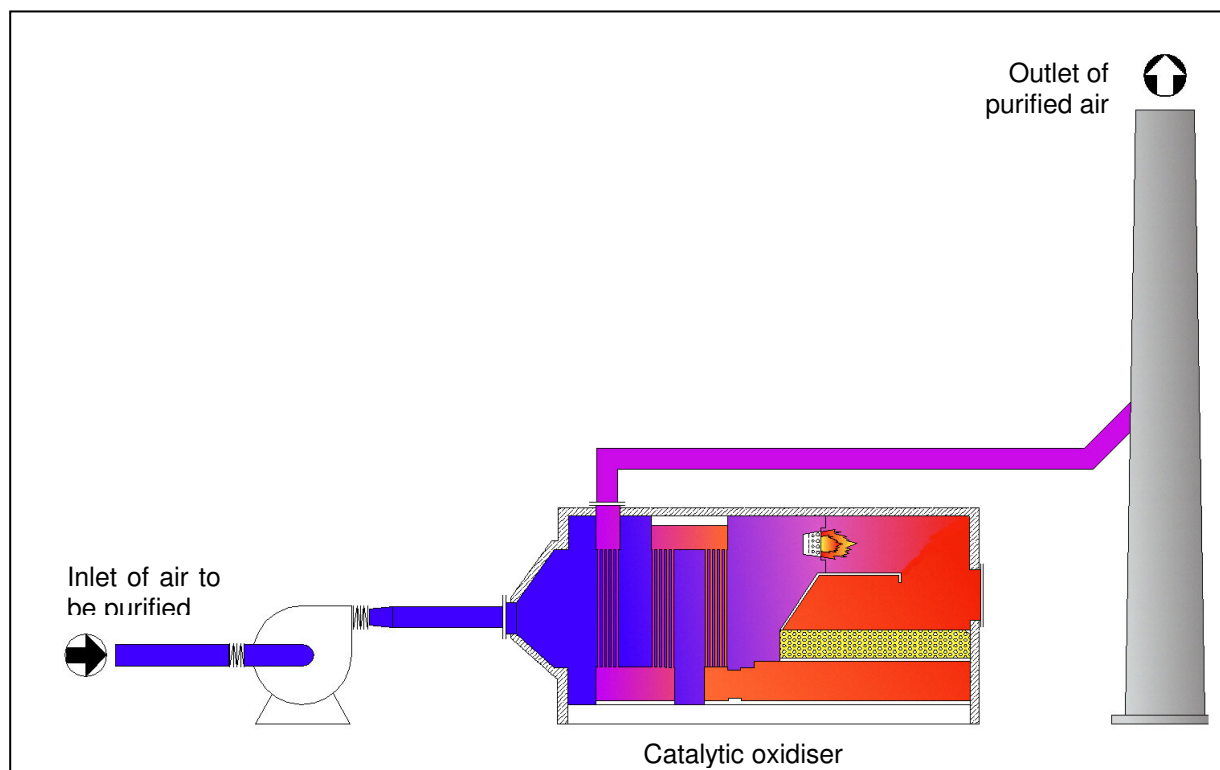
The unit is essentially made of a centrifugal fan and a unique case containing a heat recovering device, a modulating oxidizer and a catalytic bed.

The case is externally coated with an insulating material, in order to minimize the heat dispersion towards the environment, thus limiting the consumption and keeping the surface temperature of the lower walls lower than 60°C.

The catalyser works with pellets. The active catalytic components are platinum and palladium. This type of catalyser is hardly empoisoned and can bear temperatures up to 675°C.

The gas ramp is built in compliance with the EN 746-2 regulation, while the fuel adjustment is obtained through a modulating valve driven by a temperature adjuster placed upstream the catalytic bed.

Process layout





Operating principle

The polluted air, coming from the production departments, is sucked by a fan and sent to the heat exchanger, where it is pre-heated by the outgoing smokes. Afterwards, it goes through an air vein oxidiser and brought to the optimal temperature for the catalyser operation.

Then, the air goes through the catalytic bed, in which there is the oxidation process which transforms the hydrocarbons into CO₂ and H₂O. The exothermal oxidation reaction produces energy, under the form of heat, which is translated into a temperature increase proportional to the concentration of the incoming organic component.

The high-temperature purified air coming out of the catalytic bed is sent to the exchanger, where it cedes its heat to the incoming flow.

This thermal recovery has the function of limiting more than possible the fuel consumption when self-support is not possible.

The sensitive heat of the outgoing smokes can be further recuperated installing a heat recovery battery of the air/air or air/water type according to the customer's needs.

P&I diagram

