

CATALYTIC OXIDIZER "IBC"



PROCESS DESCRIPTION

The removal of pollutants in a gaseous stream by catalytic way, means to increase temperature in order to permit the following reaction of decomposition of contained organic compounds:



Thanks to this exothermic reaction we have a further increase of temperature, proportional to the concentration of inlet pollutants and their calorific power.

Compared to a thermal combustion plant, the presence of catalyst reduces the activation energy of the reaction, making it possible at lower temperature (280°-300°C).

PLANT DESCRIPTION

The gaseous stream is sucked by a fan where a suction regulation system (inverter) can be installed, optimising also the energetic consumptions.

Before being sent on the catalyst, the gaseous stream is pre-heated into a tubular air/air heat exchanger where, in counter-current, passes the depurated hot stream coming out from the oxidation chamber. This allows an energetic recover of max 70%, reaching an autothermal concentration (any consumption of auxiliary combustible) with an inlet concentration of 3-4 g/Nm³.

An auxiliary burner positioned into a fitted reactor integrates the temperature before the gaseous stream passes the catalyst bed.

The kind of catalyst, with precious metals or with common metal oxides, supported by honeycomb or pellets material, is chosen according to the organic compounds composition to be oxidised.

Thanks to the new catalyst formulations is now possible to destroy also sulphured or chlorinated organic compounds.

It is also possible to realize a regenerative catalytic oxidiser that is optimized for very low inlet V.O.C. concentration.

The process remains unchanged but is modified the heat recovery system is modified, introducing 2 tanks of thermal mass that have the function of heat accumulator in place of the tubular heat exchanger.

With this version it is possible to push the energetic recover till 95% and to reach the autothermal concentration up to 0,8-1 g/Nm³.