

Now as ever, environmental protection is a big, topical subject for Standardkessel Baumgarte. In this connection an important objective is to develop sustainable concepts for the reduction and avoidance of pollutants. Here Standardkessel Baumgarte provides a wide range of sustainable solutions in the form of product-integrated environmental protection.



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JFE Engineering Group
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PROCESS TECHNOLOGY

**SOLUTIONS ALL AROUND
WASTE GAS, EXHAUST AIR
AND FLUE GAS CLEANING**

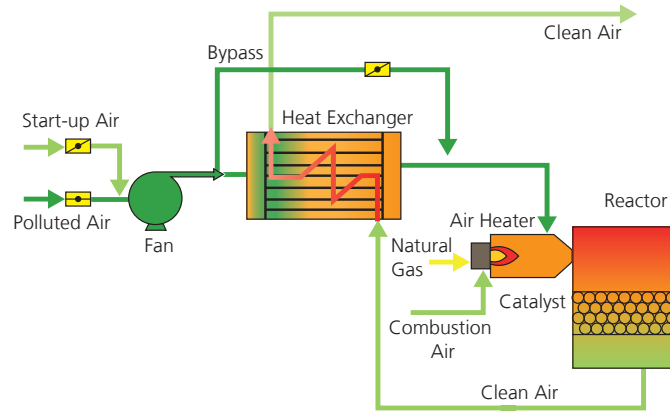
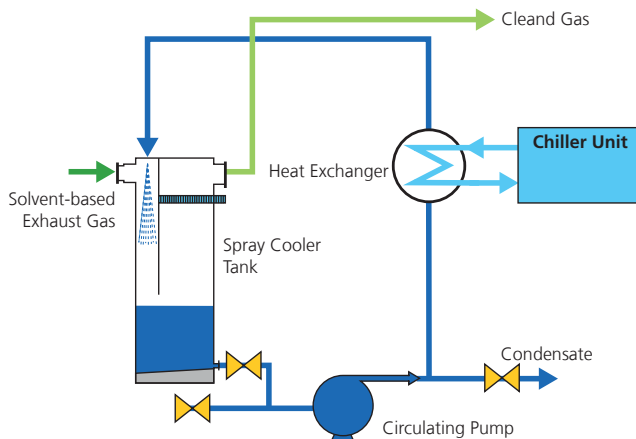


CONDENSATION

With a high pollutant and/or solvent concentration in the waste gas, consideration is given primarily to recovering the pollutants or solvents as valuable substances in order to save raw materials, energy and costs.

A tried and proven process is that of condensation. Depending on requirements and the particular application it is used for emission reduction, recovery and waste gas conditioning as an independent or multistage measure e.g. in combination with a fine cleaning system arranged downstream.

Condensation is a thermal separation process in which the waste gas stream containing pollutants and/or solvents cools down to a temperature below the dew point of the compounds. The condensate forming is collected directly in a utilisable form. Depending on the demands made on the condensate, the product recovered can be fed back directly into the process. This is particularly advantageous in the case of applications in such areas of use as coating plants, circulating gas dryers, fixed-bed drying, film coating, chemical and pharmaceutical process engineering, tank farms, gas displacement and respiratory gas. Here, direct condensation is specifically used.



The catalytic process lends itself to waste gas, exhaust air and flue gas cleaning. The pollutants are converted by oxidation or reduction, if necessary with the use of an additive. Catalytic processes are usually characterised by lower reaction temperatures than in the case of comparable thermal processes. This permits more efficient process control with a considerably reduced energy input. The catalytic process is exothermic. Depending on the case of use and the level of pollutant loading, the heat is recovered via recuperation or regeneration. For the respective specific application - for the initiation of and support for the reaction - various stable and highly active catalysts are used. The pollutants are converted on the surface of the catalyst with a further chemical element or a compound. This element or compound is either present or has to be added. With the use of tried and proven catalysts, reliable adherence to the statutory emission values is ensured.



COMBINED PROCESSES

When considering individual emission reduction measures, it is to be taken into account that waste gas streams can often no longer be cleaned in an ecologically meaningful manner by means of a single-stage cleaning process. With regard to the constituents and their concentration in the waste gas, mostly further process stages arranged upstream and/or downstream, which are to be regarded as supplements, are to be used.

Also official requirements in some cases envisage demanding a combination of processes as a solution.

