

JOA PRIMARY TECHNOLOGY

Since 1998 JOA has designed and built Primary exhaust systems with the key purpose of providing:

- MAC compliant emissions to the operators
Emission level: < 1 mg/m³
- Exhaust control; Odor abatement
Target: C98, 1-hour: 1 ou_e/m³ at plant contours
- Exhaust control; Dust and gaseous compounds
Emission level: < 5 mg/m³; TA-Luft / NeR
- Guaranteed stable processing and minimized system pollution

As a specialist in process exhaust air / gas cleaning, JOA has developed expertise and experience in advanced scrubbing applications for Primary, e.g. handling belt transitions, DCC's, CC's, toasting lines and Dryers. Due to the modular set-up, our scrubber units are extensible and adjustable to process changes.

Scrubbing technology

Odor abatement:

Cost effective standardized solutions based on JOA Structured Packing towers and Cross Current chemical scrubbers. High efficiency (85-90%) odor abatement with advanced bio-fouling control and efficient removal of gaseous pollutants (98%).

High efficiency dust removal:

The proprietary in-line venturi (99.9% removal efficiency), is applied to critical dust emissions and suitable for high temperature processes such as tail gas cleaning.



Structured Packing tower / 3-Stage Odor abatement unit including the JOA inline-venturi™ scrubber (low energy usage)

Focus: Highly efficient scrubbing technologies with low energy and water consumption. Standardized solutions for odor abatement, dust particles and gaseous component scrubbing applications.

Odor abatement methodology

Odor abatement solutions start with collecting all relevant data, with the purpose of building reliable odor dispersion and source elimination models, to calculate the required odor abatement efficiencies.

In this way adequate technology selection and prioritization of odor source elimination is provided.



European standard for dynamic olfactometry EN13725; collecting design input

Dust control

Another important topic for Primary and DIET plants is balanced de-dusting. The key contributor to cigarette cost is tobacco. Minimizing losses of valuable cut filler, especially in the low density ET processing is achieved by applying GCM™ balancing in combination with advanced hood designs.



SUSTAINABLE SOLUTIONS

Risk minimization by advanced modeling

In the past 10 years JOA has designed over 450 systems based on GCM™ modeling. This design tool applies physics on multi-phase extraction systems of primary emission points. Adequate source elimination prevents e.g. Nicotine, Ammonia, steam / condensate and dust-emissions from entering the plant. Flow profile modeling and system balancing guarantees minimization of condensation and dust settling (reduced maintenance) and optimization of energy usage. GCM™ models in combination with 3D engineering support reliable project execution in running plants by minimizing installation risks. Also, modeling supports centralized extraction systems, significantly reducing CAPEX and operational cost.



Odor contour modeling; dispersion of odors translated to the impact values at the plant contour

For Odor Abatement projects, early stage adoption of GCM™ CalPuff modeling creates clear insight in the key challenges. The deliverable of the model is selection of the best possible technology and capability to communicate the engineered solutions internally and to the authorities

Related JOA technologies for Primary and Secondary

Energy recovery for FTD's:

The JOA in-line venturi is provided for hot water or steam generation in the JOA-ERD skid.

Secondary:

JOA has a wide range Secondary cut filler feeding and de-dusting products. Next to scrubbing technology for odor abatement, JOA provides solutions based on Activated Carbon adsorption and Ionization, exhaust capacity dependent.

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