EXHAUST GAS PURIFICATION FOR STATIONARY ENGINES

Hardly a day goes by without news about air pollution, evoked through exhaust gases of power stations, incinerators, heating plants as well as other combustion processes.

combikat™, is an exhaust gas aftertreatment system developed by Hug Engineering. It has already demonstrated on a global scale that it contributes efficiently to the improvement of air quality.

With the combikat™ exhaust gas purification system, the following pollutants can be significantly reduced or eliminated:

• nitrogen oxides (NO)
• carbon monoxides (CO)
• hydrocarbons (HC)
• particulates (PM)

combikat™ exhaust gas purification systems are suitable for:
• diesel and heavy oil engines
• gas engines
• engines powered by renewable fuels
• incinerators

from 200 kW to 40 MW.

DESIGN OF COMBIKAT™:

Thanks to its modular design, the combikat™ exhaust gas purification system can easily be adapted to the customer’s individual needs.

combikat™ consists of the following main components:

• converter with SCR/ OXI/ ROM (ammonia killer) catalysts
• converter with particulate filter
• reactant injector (urea or ammonia)
• injection pipe
• reactant dosing system
• exhaust gas monitoring (if required)
• reactant pumping system

Particulate filter and catalysts can be integrated into one converter housing or applied individually.
**CUSTOMIZED SOLUTIONS**

**NOX REDUCTION WITH SCR**

A reducing agent (aqueous ammonia or aqueous urea solution) is injected into the exhaust gas. The exhaust gases and reducing agent are then converted onto a catalyst, wherein the nitrogen oxides are transformed on the catalytic surface into nitrogen ($N_2$) and water ($H_2O$).

The oxidation catalyst in the converter oxidizes carbon monoxide and hydrocarbons into carbon dioxide and water vapour.

Depending on the SCR-honeycomb volume in the converter, a reduction in excess of 98% can be achieved.

The injection of the reactant is continuously controlled by a NOx-Controller, especially developed by Hug Engineering (reactant dosing system). Thanks to the extremely accurate control technology applied, extra-low emission limits can be achieved (closed loop).

Another possibility is to inject the reactant according to the engine load curve (open loop).

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**REDUCTION OF PARTICULATE MATTER (PM):**

If required, a particulate filter can be installed in front of the SCR-stage. In the silicon carbide particulate filter developed by Hug Engineering, the particulates are filtered and eliminated in excess of 99%. Our filters achieve the highest standards and are VERT certified.
ONE-STOP SHOP
FOR EXHAUST GAS PURIFICATION

Hug Engineering has been active in the field of exhaust gas purification technology since 1983. Hug Engineering develops, manufactures and tests all components of its exhaust gas purification systems in-house. In order to maintain our advanced position in technology and quality in the market place, highly qualified specialists of Hug Engineering permanently research, develop, optimize and expand the products.

Projects with many reputed customers around the globe are proof of our many years of competence and experience.

Thanks to our integral in-house production of all key components in Switzerland, we can easily meet customer’s requirements and provide customized solutions.

ABOUT HUG ENGINEERING AG

Hug Engineering AG based in Elsau, Switzerland, is the leading manufacturer of exhaust gas aftertreatment systems.

Hug Engineering AG is part of the German ElringKlinger Group.