



INNOVATIVE TECHNOLOGY

makes a difference

THE RIGHT TO BREATHE CLEAN AIR

Air pollution is a big global problem. Poor air quality poses a major threat to human health, in developed and developing countries alike. Traffic, in particular diesel engines, is the main source of air pollution in our cities.



Global actions for better air quality

- Stricter air quality and emission standards
- Cleaner engines
- Alternative fuels: biodiesel and hydrogen fuels
- New energy sources, e.g. electricity
- Subsidies for environmentally friendly solutions

Proventia's solutions

- Innovative, high-tech emission control systems for diesel engines, non-road machines and heavy vehicles
- Modular test solutions for engine, powertrain and battery development and testing

VISION: ZERO EMISSION



Stricter emission standards are a driving force behind many of the technological changes in the machine and vehicle building industries.

Over the last 20 years, emission standards in the US and EU have become increasingly stringent, with limits on emissions of both nitrogen oxides (NO_x) and particulates (PM) now being close to zero.

Our proven track record with DPF and SCR technologies in a variety of engines, applications and challenging operating environments is remarkable. It has made us an expert in reducing PM and NO_x emissions from diesel engines.

Our offering for OEM non-road customers

- Comprehensive engineering services • Research and development • Simulation
- Design • Prototyping • Validation • Testing services
- Urea mixing expertise and technologies • Integrated insulation for thermal management
- Flexible manufacturing options



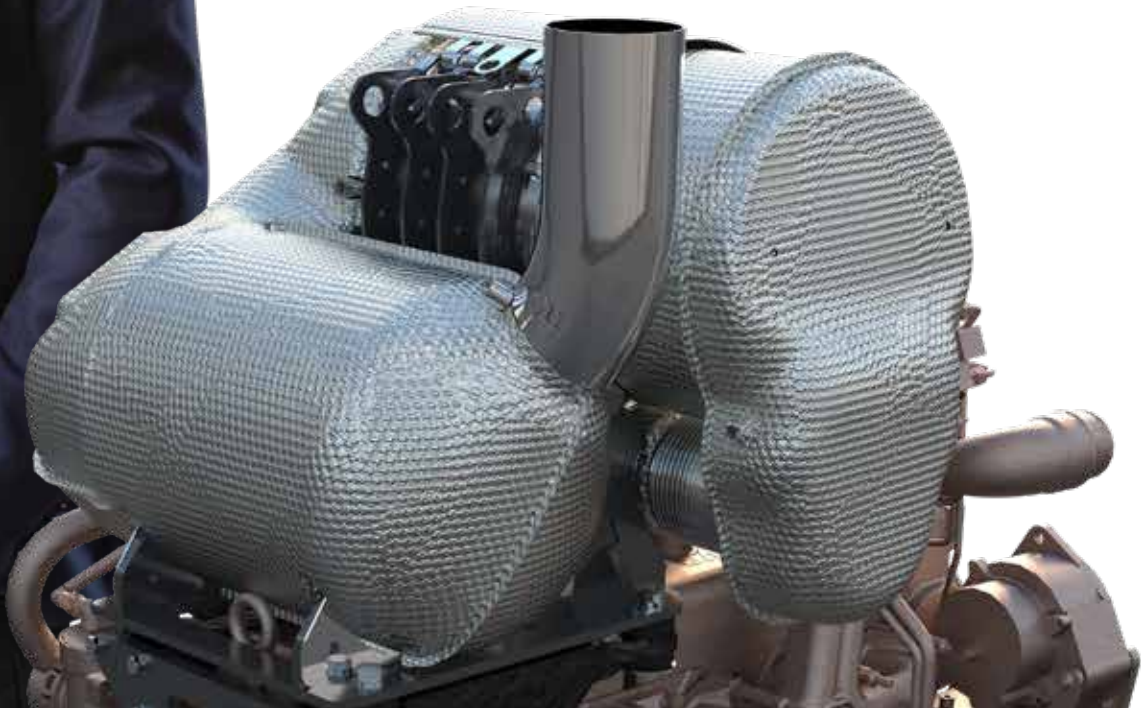
“We develop and supply high-tech exhaust aftertreatment systems for non-road machines. Agile engineering is what we take pride in.”

VILLE MURSU | PROJECT MANAGER, OEM EMISSION CONTROL



Market drivers

- Diesel is expected to remain the preferred source of energy in non-road vehicles.
- Introduction of EU Stage V emission standard in 2019–2020
- Other countries will follow the stricter rules.



EVERY BREATH YOU TAKE



With the growing number of vehicles on the roads, the amount of harmful air pollutants, such as nitrogen oxides (NO_x) and particulate matter (PM), increases.

In Europe alone, many cities have not succeeded in improving city air quality to a level accepted by the EU.

Air pollutant emissions from transport are a main contributor to local air quality problems in cities. Electrification is a long-term solution, but retrofitting brings results right now. The quickest and most cost-effective way to make existing vehicles cleaner and compliant with new standards is to retrofit them with new exhaust after-treatment (EAT) systems.

Our offering for the retrofit market

- Prizewinning NOxBUSTER® City retrofit exhaust after-treatment system for city traffic
- Technologies and innovations that enable high emission reduction rates also at low exhaust temperatures in slow urban driving
- Reliable, easy-to-use systems with supplementary services, e.g. filter servicing and emission monitoring
- Specific Euro VI retrofit systems for major vehicle makes and models

“Retrofitting is a fast-acting solution to improve air quality and to minimise health, environmental and financial impacts of traffic pollution”

JAAKKO KURIKKA | PROJECT MANAGER, RETROFIT EMISSION CONTROL

AKE

Market drivers

- Poor air quality in cities
- High NO_x levels, cities do not comply with air quality requirements
- Majority of buses and heavy vehicles still run on diesel
- Need to upgrade existing diesel vehicles to a stricter emission standard



WINNER

TESTS IT ALL



Increased vehicle complexity and new energy sources require advanced development and testing capabilities in the automotive industry.

Development times are shorter than ever, and fuel efficiency and emission reduction goals are harder to achieve. The shift towards hybrid and electric vehicles means serious investments. The demand for testing solutions for hybrid and fully electric powertrains and EV batteries is rapidly increasing.


Proventia offers a modern and flexible approach, with modular test laboratories and centres. Proventia Test Solutions allow customers to rapidly increase

their development capacity, change the setup at any time or expand the capacity in stages, without disturbing operations in other test cells.

As Proventia Test Units are manufactured and pre-commissioned before delivery, they are fast and convenient to deploy. This leads to a quick and optimised testing capacity increase for the customer. Each Proventia Test Unit is an independent test laboratory that can be equipped with a customer-specific combination of key equipment.

Our offering for testing market

- Modular test solution concept that scales from single units to large test centres
- Modular test units are suitable for development and testing of engines, powertrains, batteries and e-components



“I am proud to be part of a team who are able to offer a modern, flexible modular test solution for the development needs of fast changing automotive industry.”

MIKA LAKSO | PROJECT ENGINEER, PROVENTIA TEST SOLUTIONS

Market drivers

- Stricter emission limits
- Automotive industry shifting towards hybrid and electric powertrains
- New energy sources and electrification are increasing demand for development and testing capacity
- Demand for battery testing cells is increasing



WHAT WE DO TODAY MEANS

CLEANER AIR TOMORROW

We are an agile technology supplier for engine, machine and vehicle industries. With our skilled, experienced team of professionals, we offer systems and solutions for world-leading manufacturers.

Proventia's technologies are based on high-quality Finnish engineering. Research and development activities and the assembly of test units are located in Oulu. We also manufacture selected special products and components in Oulu and the Czech Republic. Our audited, first-rate subcontracting chain takes care of other production.

Proventia was founded in 1994. Its head office is located in Oulu, Finland. The company has around 130 employees in Finland and the Czech Republic. Proventia is part of the Head Invest Group, a group of technology companies.

Proventia's technologies stand for cleaner air on every continent – for all of us.





VISION

Our vision is zero emission.

MISSION

Our mission is to provide high-quality, innovative products and services that protect the environment and human health. We help the engine, machine and automotive industries to improve their energy efficiency and develop environmentally friendly solutions.

PROVENTIA'S BUSINESS AREAS

EMISSION CONTROL

- OEM • Retrofit
- Thermal components

TEST SOLUTIONS



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