

Building & Industry

NOVENCO

SCHAKO Group

Volkswagen Navarra – pioneer in sustainable ventilation technology

The Volkswagen Group is Europe's largest automobile manufacturer, with production sites in seven European countries.

With the group-wide program Strategy 2025, Volkswagen aims to become a world-leading provider of sustainable mobility. Air handling units with modern axial fan technology support these goals. The latest generation of units helps improve efficiency across all ventilation and air-conditioning applications.

Axial fans in operation

Since 2017, Volkswagen has tested and evaluated high-efficiency axial fans through extensive measurements and on-site trials.

In 2018, the results moved into full implementation. Two production sites had new AHUs with advanced axial fan technology installed - the Porsche site in Stuttgart/Zuffenhausen, Germany, and the Volkswagen Navarra site in Pamplona, Spain.



Highly efficient axial fans with aerodynamic design for the highest pressure increase



Volkswagen Navarra



Volkswagen Navarra factory, Pamplona, Spain

Volkswagen Navarra – pioneer in sustainable ventilation technology

Volkswagen Navarra takes daily responsibility for the environment, safety and society. Resource management and emission control are key priorities. Through innovation and careful planning, the site aims to reduce energy use and CO2 emissions.

For this strategy, Volkswagen selected the new AHU generation with NOVENCO® ZerAx® axial fans. The units were chosen for the ventilation renewal in the assembly hall.



ZerAx® fans delivering high efficiency in AHU



NOVENCO ZerAx® axial fans in parallel operation

The Volkswagen project

One of the factory's largest production buildings required a complete ventilation upgrade. The project required higher air volumes, yet space for installation was limited. The solution was to relocate the AHUs to the roof. Six units – three rated at 80,000 m³/h and three rated at 60,000 m³/h – were placed on a steel platform between two buildings.

Besides energy savings, compact size, reduced weight and lower noise were essential requirements.

A new air conditioning generation



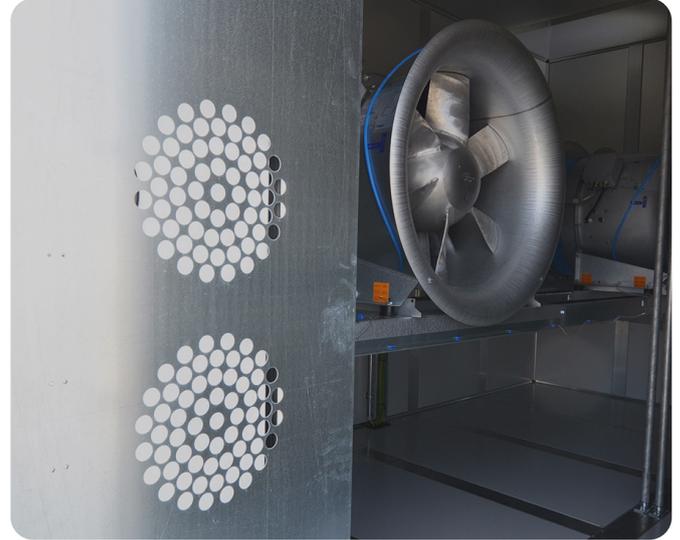
Energy savings, reduced weight and low noise were key factors in the upgrade

These demands were met by the new AHU generation using NOVENCO's highly efficient axial fans. The final equipment, commissioned in mid-December, exceeded expectations.

The ZerAx axial fans deliver fan efficiencies up to 92%. NOVENCO further optimised the ZerAx design for AHU applications to increase performance even more.

Facts:

- Two parallel supply and exhaust fans in each unit
- Newly developed $1.5 \times D$ diffusers for free outlet optimisation
- New EC motors up to 31 kW and Danfoss EC+ concept
- New AHU technology offering 20% energy savings, 30% shorter length and 30% lower weight



The compact fan design enables easy integration into the system

Interaction of different components

The high performance results from intelligent interaction of all system components. At NOVENCO, this is embodied in the EC+ concept, developed with Danfoss in Denmark. Only by optimising the fan, motor, electronics and diffuser together can the full potential of the system be realised.

System efficiency increase

- Axial fans with up to 92% efficiency
- Newly developed EC motors up to 31 kW with efficiencies up to 96%
- Optimised frequency inverters for EC motors with up to 98% efficiency
- Newly developed diffusers, optimised for free outlet