



## Defender 500 protects key engine components in CHP units from leading manufacturer

Schnell Motoren AG, Amtzell, Baden-Württemberg, Germany

Case Story



CHP manufacturer Schnell Motoren AG's annual production forecast is 600 units and more than 3,000 Schnell CHP units have now been installed worldwide.

Schnell Motoren AG are world market leaders for Combined Heat and Power (CHP) units for the generation of energy from lean gases, including biogas, landfill gas, sewage gas and wood gas. The company offers the CHP units complete with control systems as engine room units, or as fully equipped container units. Schnell is equipping an increasing number of its engines with Alfa Laval Defender 500 oil mist separators for cleaning ventilated crankcase gases.

### Tighter regulations

Global emission regulations are becoming increasingly stringent. Tier 4, Stage IV, for example, is due to come into force from 2015 onwards. Thus, some method of cleaning crankcase gas is

essential on today's industrial diesel and gas engines.

Schnell builds its CHP units around modified Sisu, Scania and, recently, Mitsubishi engines. The company first came into contact with Alfa Laval crankcase gas cleaning technology some years ago as there was an Alfdex separator available for the Scania engine. Schnell appreciated the benefits of the closed crankcase ventilation system and the integrated crankcase pressure control valve.

### Defender 500 tested

Alfa Laval later launched the all-metal Defender 500 oil mist separator, based on the same principles as the Alfdex.

Developed for on-engine installation, the service-free Defender 500 is a gas separator specially designed for removing oil aerosols from the blow-by

### Schnell Motoren AG, Germany

Headquartered in Amtzell, Baden-Württemberg, Schnell Motoren AG has more than 450 employees at three sites in Germany, a subsidiary in the Czech Republic and sales offices also in Malaysia and Singapore. In 2000, Schnell began specializing in the development and production of combined heat and power (CHP) units for the generation of energy from lean gases. The company's annual production forecast is 600 CHP units and more than 3,000 Schnell CHP units have now been installed worldwide. Two recent installations in Germany are BioEnergie Algermissen, Hannover, and Agrargesellschaft Kandelin, Süderholz Kandelin.

## Fast facts:

### Customer:

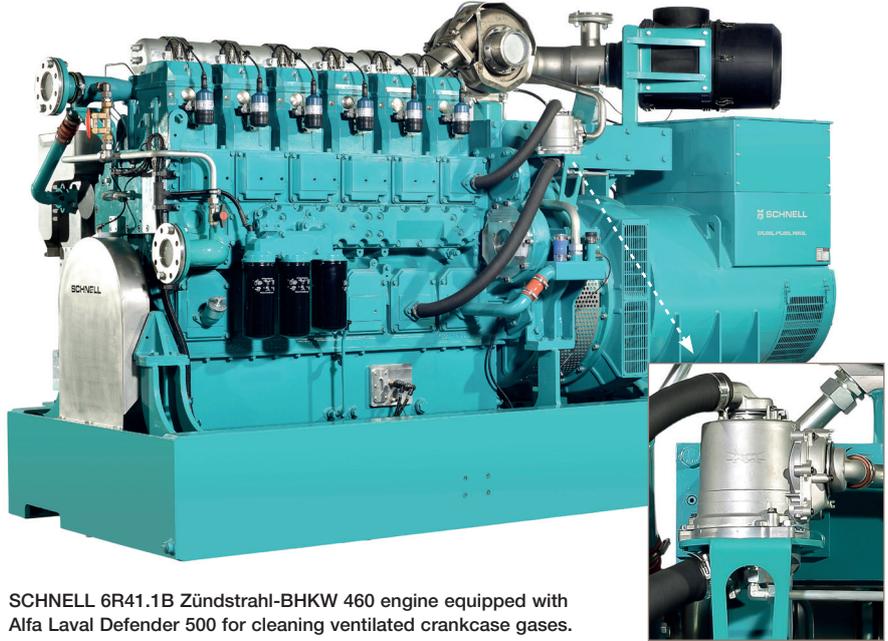
Schnell Motoren AG, a German producer of CHP units for the generation of energy from lean gases.

### The challenge:

Global emission regulations relating to industrial diesel and gas engines are becoming increasingly stringent. To comply with the regulations, engine manufacturers must have closed crankcase ventilation systems and it is necessary to clean ventilated gases in order to protect key components in the engine, such as the turbocharger, intercooler and valves.

### The solution:

Schnell tested Alfa Laval's new Defender 500 oil mist separator, which is suitable for building on to any engine. This solution has lived up to Schnell's expectations and is now being installed on Scania-Schnell and Mitsubishi-Schnell engines in the Schnell CHP units.



SCHNELL 6R41.1B Zündstrahl-BHKW 460 engine equipped with Alfa Laval Defender 500 for cleaning ventilated crankcase gases.

Inset: Defender 500 in place showing mounting bracket, connections and hoses.

gas being ventilated from the engine crankcase.

It was suggested that Schnell should test the Defender 500 for their Scania-Schnell and Mitsubishi-Schnell engines. In the Schnell engine design the ventilated air is connected back to the air inlet of the turbocharger, to be reused in the engine. This way no emissions are released to the surrounding environment.

Schnell recently placed production orders for its Scania engines, and has now placed orders for its Mitsubishi engines as well.

### Prolonged component lifetimes

Peter Völk, Purchasing Manager, Schnell Motoren, emphasizes that blow-by gases being re-used in the engine must be very clean in order not to damage the turbocharger and the intercooler.

"The Defender 500 is a highly efficient separation solution that allows us to have a closed crankcase ventilation system and, at the same time, protect key engine components, such as the turbocharger, intercooler and valves.

With this solution, the turbocharger does not require frequent maintenance and its lifetime as well as that of the engine are prolonged."

Thus the Defender 500 helps Schnell comply with existing and coming regulations relating to global emissions without risking damage, reduced lifetimes or excessive service requirements for key engine components.

### Flexibility and quality

Peter Völk: "The Defender 500's heat-resistant die-cast aluminum casing gives maximum flexibility in mounting the unit on the engines. "Also, the high quality appearance of the unit matches the quality thinking we apply to every aspect of our products."



Alfa Laval Defender 500 oil mist separator.

Mikaela Boström, Business Centre High Speed Separators, Alfa Laval: "We are happy to be in this very environmentally aware segment and to be a partner for Schnell with their high quality thinking."

### Product facts:

#### A complete crankcase ventilation system

The Alfa Laval Defender 500 oil mist separator minimizes crankcase gas emissions from industrial diesel and gas engines. It serves as a complete engine crankcase ventilation system, including cleaning of gases and built-in crankcase pressure control. By protecting the turbocharger and intercooler, the Defender 500 helps maintain high engine performance and prolong engine life for closed ventilation systems.

#### Some features and benefits

- High performance disc stack technology: Cleaning efficiency higher than 98%.
- Minimizes coke deposits with clean inlet air: Maximized turbocharger efficiency.
- Oil-free inlet air: Maximizes intercooler performance.
- Integral pressure control valve: Maintains stable crankcase pressure, which is important in closed crankcase ventilation systems.
- All-metal housing/casing, high temperature FKM (Viton) seals: Flexible engine mounting, optimized for the toughest duties and highest temperatures.

### How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at [www.alfalaval.com](http://www.alfalaval.com).