

PRESS RELEASE

**KONVEKTA AG Busworld 2013:**

**Economical, light, low-maintenance – the new series of air conditioning units UltraLight II of Konvekta AG**

Well done! Konvekta is well on the way. Most recent example: the Konvekta UltraLight II bus air conditioning unit. Although practical use has priority for bus roof-top air conditioning units, the UL II appears elegant and dynamical.

With its striking design and exact shape the ultra light adapts itself harmonically to any bus roof. A specially developed high-performance material allows a particularly compact construction and grants the complete system remarkable features:

the highly insulating effect of the material and the associated density of the construction reduce the energy consumption considerably. In addition the system needs 10% less refrigerant compared to conventional air conditioning units. As all components are embedded in the pre-moulded material the complete system acts insensitively towards roadway-related vibrations.

Additionally, the insulating effect of the basis material causes less dust and dirt to get into the unit. Also the accessibility of the components was improved and the “plug-in principle”, without unnecessary screwed brackets, makes the exchange of components imaginably easy. This way, servicing too, can be realised with a 25% less expenditure of time.

Yet not only the exterior design convinces but also the interior features are impressive. The focus of the engineers was on economy and efficiency. The technical platform is based on both components, having proven their quality in daily use and a due portion of new modules, to make the system even more powerful. Therefore in this case too, finned heat exchangers produced by

Konvekta are built in. These provide the best features in the field of maintenance and service and guarantee a high reliability, even in case of partial refrigerant leakage.

As important as a high reliability of the air conditioning units, just as deciding are the acoustic aspects, too. For the series of models high value fan technology with about 5 dBA less noise emission were used.

Looking at its weight the lightest version of the UltraLight II series with only 127 kg does its name credit.

This series was developed according to Konvekta standards, approved since almost 60 years, and also manufactured following to these criteria. Outstanding characteristic is the high level production depth, so plastic parts and piping systems are both manufactured in-house. All components are subject to very strict test requirements. Consequently this system has of course been tested to 100% and has been provided with a protective filling. Being a system supplier and developer of the first bus roof-top air conditioning unit it is almost self evident that Konvekta's product portfolio covers all scopes starting with fully automatic control units through to heat exchangers.

Like the predecessor model, the new Konvekta series is optionally available with the environmentally friendly refrigerant CO<sub>2</sub> (carbon dioxide / R744). This way Konvekta not only presents itself as a reliable and sound partner but is also a "bus-length" ahead in the matter of innovative tomorrow's questions.

**[www.konvekta.de/press.html](http://www.konvekta.de/press.html)**

**Not just any air conditioning unit**  
**Impressive, powerful and reliable – the new StreamLine series**

At this year's BUSWORLD Konvekta presents the most powerful high-capacity fresh air unit ever: The new StreamLine series, in modern structure and a sporty, purist style.

The current trends in automotive manufacturing evidently set the example for the new generation of air conditioning units by Konvekta AG: Convex and concave curvatures that will remind you of the edges of the modern Roadster chassis. In addition, the sharp lines of the edges promise to provide good aerodynamics. Overall, the system is streamlined with the roof of the bus and therefore has the effect of being a natural integral component of the vehicle construction.

The external zero gravity that is epitomized in this design style is reflected in the actual construction of the air conditioning equipment. Thanks to a special lightweight construction material, which forms the basis for holding all components, they weigh up to 30% less - this is equivalent to 42 kg less than in the previous systems. In addition, the new system design has also resulted in a 25% (500 mm) reduction in size.

The new air conditioning hoods consist of several parts and these can be opened both easily and conveniently during servicing. In this manner, all sections of the system are easily accessible and reduce the time required for servicing by up to 40%. Finally, the design makes a significant contribution to the functionality of the roof air conditioning systems.

### **100% fresh air from up to eight blowers**

The internal values of the new air conditioning equipment range demonstrate that the focus on the fresh form of the design did not come at the expense of technology: While the proportion of fresh air is only 20% in conventional systems, the new ones work with up to 100% and deliver filtered and conditioned fresh air. The existing range of power of 33 and 39 kW was expanded by two variants with 41 and 44 kW, and also up to eight evaporator blowers. As a result, not only is the distribution of air improved and the cooling effect accelerated, but even lower temperatures are achieved.

The interfaces and dimensions are identical for all variants of power capacity, which means that any variant may be installed as desired in roofs prepared in the same manner. In addition, the more compact construction enables all systems to be combined with a heater system.

The new StreamLine range completes the system portfolio of Konvekta AG and may be deployed in all climatic zones on account of the modern design and the different ranges of power rating.

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### **Moving cleanly into the future: CO<sub>2</sub> air conditioning systems**

With effect from 2017, CO<sub>2</sub> air conditioning equipment is meant to become standard in the automotive industry. Thanks to KONVEKTA, this concept is already a reality for buses and trains.

Air conditioning technology without the greenhouse effect: What sounds so simple is one of the most urgent challenges for the automotive industry in the future. Since the time that the most prevalent coolant at present, R134a, was prohibited by the EU for the sake of climate protection, the search for alternatives has been going on full speed ahead. In the process, the air conditioning specialist KONVEKTA, based in Schwalmstadt in North Hessen, has already launched the trend-setting solution in the segment of utility vehicles – air conditioning systems with the coolant CO<sub>2</sub>! Numerous buses and trains

have been driving ahead cleanly with this innovative technology for some years. And, in the meantime, it has become evident that passenger motor vehicle manufacturers will also soon follow suit.

### **Head-start since 1996**

The potential of CO<sub>2</sub> air conditioning technology was discovered by the KONVEKTA engineers more than 15 years ago. In 1996, they were the first to launch a functional CO<sub>2</sub>-based air conditioning system in a bus plying on the road. This is why a constantly increasing number of manufacturers and transport companies such as the Berlin-based BVG are relying on KONVEKTA CO<sub>2</sub> air conditioning equipment. Moreover, the benefits are paying for themselves across the entire segment. In contrast to all other coolants, CO<sub>2</sub> is a natural gas that can be withdrawn easily and whenever required from the atmosphere – without any harmful impact on the climate – and it can be returned to it again. For the sake of comparison: The greenhouse potential of the coolant R134a is 1,400 times greater than that of CO<sub>2</sub>!

Even in terms of energy efficiency, CO<sub>2</sub> air conditioning systems prove their superiority. Based on the greater compression efficiency and the better heat transfer by CO<sub>2</sub>, systems based on them reduce the consumption of fuel even for higher levels of cooling power. Considerably reduced service and maintenance costs are added benefits. Thus, for example, expensive and special tools are not required for discharging the systems and the disposal of or recycling the synthetic coolants is no longer necessary. And thanks to the procurement price of just 2 Euro per kilogram of CO<sub>2</sub>, the costs of filling or refilling are extremely competitive.

### **Innovative force decides.**

The manufacture of CO<sub>2</sub> air conditioning systems calls for distinctive specialist know-how. Since the systems work with significantly higher pressure compared to conventional air conditioning systems, they demand innovative engineering solutions and supply chain logistics that are specifically customized to meet their requirements. Thus, it is no wonder that several passenger motor vehicle manufacturers have been relying on apparently more simple solutions such as the R1234yf coolant for a long time in order to avoid the high costs of development. However, in the most recent series of tests conducted, this alternative was found to be highly combustible, which could have disastrous consequences in the event of an accident. In addition, the greenhouse potential of R1234yf is still 4.4 times more than that of CO<sub>2</sub>.

This is why leading manufacturers have now finally made their decision: the future belongs to CO<sub>2</sub> air conditioning systems!

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**Construction of a new warehouse and logistic centre at headquarters Schwalmstadt**

Konvekta laid the foundation stone for a new logistic centre. The ultra-modern complex is a future oriented investment for a reliable and efficient logistic chain.

On a 4.200 m<sup>2</sup> large area in the industrial zone of Schwalmstadt, Konvekta has been building a new warehouse and logistic centre with 2.450 m<sup>2</sup> utility space. Apart from the new warehouse complex further production areas are established in the building, additional offices and a common room will find their way in as well. With 7 meters storage height the new hall offers space for 2.200 pallets as well as for a rush order picking area with flow racks for small parts storage. Central storage and increased availability of components will reduce the delivery time to the customers. Thus the complete supply process is both more efficient and reliable.

The entire complex is controlled by a high-performance logistic system with a paperless scanning process. A bar code identifies each component clearly and assigns it to a current order directly. Consequently, the prediction of future demand can be improved and stock management can be optimized. Furthermore this procedure provides the bin location to be defined in a way that much-frequented components are quickly accessible and those required less are in the rear storage location. This way distances are optimized and production times shortened.

In future the space of the current logistics and dispatch department will be used as additional production area for the manufacturing of air conditioning systems for buses. In recent years these facilities have become too small as well and now can be extended adequately.

“The new warehouse and logistic centre is an important element of a modern company and will contribute significantly to the future development of Konvekta. The new building is a clear statement to our employees, partners and customers to emphasise our commitment to the production site Schwalmstadt”, underlines CEO Constantin H. Schmitt.

Provided that the construction works proceed according to plan, the new warehouse and logistic centre will be started up in the fourth quarter 2013 already.

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