



PRESS RELEASE - 19 SEPTEMBER 2022

## **Market launch for ECOOLTEC: Transport refrigeration machines for tomorrow's world**

- **ECOOLTEC Grosskopf GmbH technology available today to meet current and future challenges facing refrigerated transport**
- **Transport refrigeration machines for motor vehicles, articulated trucks and semitrailers in local, regional and long-distance traffic**
- **ECOOLTEC launch at the IAA Transportation Hanover in September 2022**

**ECOOLTEC Grosskopf GmbH aims to offer the refrigerated transport industry solutions to the challenges posed by environmental regulations and CO2 certification. To this end, ECOOLTEC has developed a new generation of particularly sustainable, efficient and safe refrigeration machines for a wide range of applications. The start-up has optimal prerequisites such as secured financing and experienced employees, most of whom have worked for decades in the field of transport refrigeration.**

Market launch for ECOOLTEC Grosskopf GmbH and for a revolutionary generation of transport refrigeration machines: The company's founder and patron Peter Grosskopf, thanks to his extraordinary expertise, repeatedly generated new impulses and standards in the transport refrigeration industry over the past 40 years. ECOOLTEC has continued to drive forward progress by developing innovative transport refrigeration machines to meet the current and future challenges facing temperature-controlled transport. The newly founded company, situated in Mülheim an der Ruhr, is helping to defining a new state of the art in transport refrigeration.

Technological highlights of the new refrigeration machines are the almost emission- and CO<sub>2</sub>-free drive, the use of natural refrigerants with single-figure global warming potential, an overall height of only 250 millimetres for installation in the refrigerated vehicle roof, highest operational safety together with enormous available cooling capacity, coupled with extraordinary energy efficiency.

### **Refrigerated transport without harm to people and the environment**

ECOOLTEC's primary goal is to offer customers in temperature-controlled transport forward-looking, environmentally friendly technologies. "We are dedicated to the task of ensuring that all temperature-controlled transports can be carried out with the help of forward-looking technologies without burdening people or the environment," explains ECOOLTEC CEO Henning Altebäumer. "Almost the entire cold chain today could be operated without fluorinated greenhouse gases, just not the transport refrigeration sector. ECOOLTEC's system now closes that gap and enables the food industry, for example, to actually offer ice cream and frozen pizza with the greenest footprint," explains Dr Jürgen Süß, who as Chief Technology Officer (CTO) at ECOOLTEC is responsible for the technology.

### **ECOOLTEC refrigeration machines are suitable for urban and long-distance operation**

As a result of the tightening of environmental regulations, electric drive technology will become indispensable in all refrigerated transport applications. ECOOLTEC therefore plans to market worldwide its innovative roof-mounted refrigeration units with fully hermetic refrigeration circuits. The units are suitable for a wide range of mobile applications. They can be used for the largest as well as for compact box bodies, for trailers and rigid vehicles, in both short and long-haul operations. ECOOLTEC also plans to offer equipment to suit refrigerated home delivery vehicles.

The components specifically developed for the refrigeration machines can already be produced particularly economically in large quantities; they can also be used by companies that use refrigerated containers (reefers) as well as air-conditioning systems for buses and trains.

### **A team with industry experience forms the basis of the technological lead**

In addition to the senior management consisting of Henning Altebäumer, Dr Jürgen Süß and Peter Großkopf, the company's founder and consultant, a team of employees with extensive industry experience and fully qualified transport refrigeration engineers are also responsible for the innovative technology. This structure helps to form the basis of ECOOLTEC's technological lead. The company has harnessed decades of experience in temperature-controlled transport to put innovative ideas into practical use.

In 1978, the renowned transport refrigeration expert Peter Großkopf founded FRIGOBLOCK Grosskopf GmbH, which he built up and managed until its sale in 2015. Under his leadership, the company quickly developed into one of the largest European manufacturers of high-quality transport refrigeration machines, with the name FRIGOBLOCK at that time becoming the trademark of high-performance, environmentally friendly, durable and cost-saving vehicle refrigeration systems.

### **Foundation of ECOOLTEC at the request of many customers**

Shortly after the sale of FRIGOBLOCK, Peter Großkopf decided to found Umweltstiftung Grosskopf GmbH, from which ECOOLTEC Grosskopf GmbH has since emerged. Since then, it has seamlessly continued the development of future-oriented transport refrigeration machines.

The founding of ECOOLTEC was also a result of customer requests, so that the company can immediately benefit from the interest expressed by a significant

number of parties. Funds of up to 50 million euros are available to ECOOLTEC Grosskopf GmbH via Umweltstiftung Grosskopf GmbH.



**Caption**

*CEO Henning Altebäumer and CTO Dr Jürgen Süß lead ECOOLTEC Grosskopf GmbH. The company focuses on the development of particularly sustainable, efficient and safe refrigeration machines.*

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## **Sustainable, efficient, safe and practical:**

### **ECOOLTEC revolutionises transport refrigeration**

- **Natural refrigerants with single-figure global warming potential**
- **Highest operational safety due to fully hermetic cooling circuits**
- **Ultra fast pull-down times thanks to phenomenal refrigerating capacity**
- **ECOOLTEC presents sustainable drive solutions for the purely electrically driven TM182 transport refrigeration machine at IAA Transportation**

**The newly founded transport refrigeration specialist ECOOLTEC Grosskopf GmbH has developed a new generation of purely electrically driven transport refrigeration machines that are extraordinarily economical and, thanks to their natural refrigerant, cool cargo in a particularly sustainable manner. In addition, the units are extremely powerful and highly efficient. Visitors to the IAA Transportation can experience the system at stand A16 in hall 27.**

ECOOLTEC Grosskopf GmbH has developed a revolutionary generation of transport refrigeration machines for use on commercial vehicles. "Our forward-looking refrigeration machines have been designed to benefit from the latest environmentally friendly technologies. As a result, the units not only work in a particularly sustainable and efficient manner, but they are also enormously powerful, quiet and highly integrable at the same time," explains CEO Henning Altebäumer.

The ECOOLTEC TM182 refrigeration unit can be operated electrically from the truck engine via their in-house high-performance alternator, a battery, or a separate power generator, which therefore negates the need for a highly polluting integrated diesel engine. This means that, unlike widely used diesel refrigeration machines, the ECOOLTEC unit produces neither local pollutant nor CO<sub>2</sub> emissions when in battery operation, and up to 98 percent fewer emissions via the alternator drive. ECOOLTEC will also be demonstrating the ability to operate the transport refrigeration machines using its own remote control or, alternatively, a special smartphone app, as well as the possibility of remote maintenance and software updates "over-the-air", thus, without the need for a workshop visit.

### **Unrivalled low global warming potential with GWP value of less than 3**

The technological highlight of the system is the use of sustainable refrigerants. Instead of the fluorinated refrigerants (hydrofluorocarbons) R452A and R410A, which are predominantly used in transport refrigeration and have GWP (Global Warming Potential) values of approximately 2,000; ECOOLTEC relies on natural refrigerants with GWP values of 3 and 1 respectively. The European F-Gas Regulation (EU) No. 517/2014 restricts the use of all fluorinated refrigerants, and in some cases even bans them. This will restrict the operational life of refrigeration systems, especially if refrigerants are no longer available for servicing. Rising prices for F-gases are already and will continue to cause operating costs to rise considerably.

ECOOLTEC already uses future-proof natural refrigerants for all its electrically driven transport refrigeration machines. Hydrocarbons are characterised by a high energy efficiency of the refrigeration process and offer good availability at a competitive price.

## **Maximum operational reliability through fully hermetic refrigeration circuits**

Important to stress the ECOOLTEC design pays very close attention to maximum operational safety. Since the hydrocarbon-based refrigerant R1270 (propene, GWP: 3) used by ECOOLTEC for refrigeration is flammable, ECOOLTEC has secured the system against leakage into the structure by means of a patent-pending, fully hermetic refrigeration circuit and an incredibly small refrigerant charge down by 90 percent when compared with conventional transport refrigeration systems.

The refrigeration process takes place completely outside the cargo hold. Therefore, the natural, constantly present air flow ensures that in the unlikely event of escaping, propene immediately mixes with the ambient air and evaporates. This prevents the formation of a flammable mixture. In the box body, the natural refrigerant CO<sub>2</sub> ensures cold distribution. The R1270 and CO<sub>2</sub> circuits flow past each other outside the body via a plate heat exchanger and are thus thermally linked.

## **90 percent less refrigerant required**

The low-maintenance refrigeration system from ECOOLTEC also has an enormous refrigerating capacity to meet the extreme temperature safety requirements of the demanding food distribution. The ECOOLTEC TM182 uses specially developed scroll compressors in a horizontal design. Thanks to their infinitely variable speed control, the system achieves very high capacity, controllability and high energy efficiency while at the same time generating low operational vibrations and extremely low noise emissions. The running smoothness is also remarkable, the sound level significantly lower than that of comparable diesel-powered cooling machines on the market. This is of particular benefit to the people in the cities during night-time deliveries as well as to the driving personnel.

Even in high ambient temperatures, the availability and operational reliability of the system is maintained through refrigerant injection. By careful selection and design of the system, the heat exchangers and other system components allowed the refrigerant charge to be reduced by more than 90 percent compared to conventional solutions. At the same time, the efficiency of the system was increased by engineering larger heat transfer surfaces without the need to increase overall unit dimensions.

### **Enormous performance for the most demanding applications**

This makes the unit suitable for even the most demanding applications, particularly those with high load volumes, lowest box room temperatures and frequent door openings. As a result, the TM182 offers the highest temperature safety and the shortest pull-down times under all conditions. Despite its high performance, the machine's energy consumption is remarkably low.

When operating at the same cooling capacity, the system uses 60 to 80 percent less energy than a conventional diesel-powered system. Highly efficient natural refrigerants as well as large heat exchanger surfaces in combination with a high air flow rate ensure unrivalled efficiency.

### **Compact dimensions allow complete integration into the structure**

Despite its high performance, the unit is particularly compact. Thanks to the use of specially developed components, the ECOOLTEC transport refrigeration unit achieves an extremely flat overall height of only 250 millimetres and is thus designed for complete integration into the vehicle roof of a refrigerated rigid vehicle, trailer or semi-trailer. Importantly, the unit can be fully integrated into the body without any significant loss of loading volume. At the same time, the refrigeration unit weighs comparatively little, so that the vehicle operator benefits from an optimised payload.

Since roof-mounted refrigeration units are integrated at the front and at the top of the body, they are directly supplied with fresh, as opposed to exhaust air from the truck engine compartment, which can be at temperatures of up to 90 °C. This installation position and unit design facilitate unrestricted air flow across the condenser and due to this position, the lower air intake temperature makes the unit extremely energy-efficient. With the quick-change system, the roof refrigeration unit can be removed or replaced in minutes for easy maintenance.

### **Delivering food with the greenest footprint with ECOOLTEC refrigeration**

The ECOOLTEC TM182 can be mounted on semi-trailers and rigid vehicle bodies. Thanks to the specially developed inverter, it can be connected to all common types of drive. "Of course, the perfect solution from an environmental perspective is to combine it with a battery-electric drive with or without a fuel cell," says CTO Dr. Jürgen Süß. However, the electrical energy supply with the help of the ECOOLTEC alternator on the truck engine is also easily possible with conventional diesel or gas drive. The system can also be plugged in to a mains power supply.

"The entire cold chain already has the possibility to be F-gas free, today that possibility is now available to the transport refrigeration link of that chain," explains Dr. Jürgen Süß. "Fleet operators in the food industry can now actually offer ice cream and frozen pizza with the greenest footprint," he adds.



**Caption**

*ECOOLTEC relies on natural refrigerants with single-figure GWP values instead of the predominantly used fluorinated refrigerants with GWP values of around 2,000.*

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## **Direct sales complemented by specialist dealers and bodybuilders ensure expert advice**

- **ECOOOLTEC Grosskopf GmbH presents itself at the IAA Transportation 2022 in hall 27, stand A16**
- **Direct sales, complemented by specialist dealers and bodybuilders, ensure competent customer support throughout Europe**
- **Own subsidiary in England responsible for sales in UK and Ireland**

**ECOOOLTEC Grosskopf GmbH will present its European sales network at the IAA Transportation from September 20 to 25 in Hanover. Direct sales ensure the highest quality of advice and focus on the customer and his requirements for transport refrigeration machines.**

ECOOOLTEC Grosskopf GmbH is constantly expanding the international sales network for its innovative generation of transport refrigeration machines. The newly founded specialist for transport refrigeration from Mülheim an der Ruhr relies on direct sales in Europe to ensure that all customers are addressed in an informed manner. Matthias Kiefer is responsible for the sales countries Germany, Austria and Switzerland.

ECOOOLTEC has also founded a subsidiary in England. ECOOLTEC UK Ltd. is in charge of sales in the markets UK and Ireland. The managing director of ECOOLTEC UK, John Winter, is the head of sales there. ECOOLTEC CEO Henning Altebäumer handles enquiries from all other countries.

## **Specialist dealers and bodybuilders complement ECOOLTEC sales network**

ECOOLTEC complements direct sales in individual countries with independent dealers. "We are currently in intensive talks and will expand the distribution network even further at the beginning of the coming year," explains Henning Altebäumer. ECOOLTEC is open to new partners.

Another important pillar is the sale of ECOOLTEC transport refrigeration machines via trailer and body manufacturers. Here, too, the first partners have already been found, including both well-known European series manufacturers and proven specialists for refrigerated bodies.



### **Caption**

*CEO Henning Altebäumer is responsible for sales in all European markets except the DACH countries, UK and Ireland.*

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