

CELSINEO: SEMI-TRAILER COMPETENCE MEETS COOLING EXPERTISE

- **Celsineo is a new generation of cooling systems for trailers**
- **The concept was developed in cooperation between the Krone Nutzfahrzeug Group and Liebherr.**
- **Three independent refrigeration modules increase availability, flexibility and efficiency**
- **One cooling unit for many single-temperature applications**
- **Simplified service with the "One-Stop-Shop" principle**
- **Future-proof technology**

The safe transport of temperature-sensitive goods can only be made possible by reliable cooling systems. Logistics companies want reliable technologies that are economical at the same time. With Celsineo, Liebherr and Krone are jointly presenting a new generation of cooling systems for trailers. The two companies have merged their expertise and many years of experience in refrigeration, production and marketing of refrigerated semi-trailers and the associated service into a unique concept that combines future-oriented technology, modern design and high quality of all components. "Celsineo stands for state-of-the-art technology that already offers today solutions for tomorrow's requirements. For the new product, we can apply our extensive know-how in air conditioning systems for aircraft and rail vehicles as well as commercial refrigeration in food retailing and for households to the special requirements of road freight transport," says Manfred Handl, Head of Marketing & Sales Commercial Vehicle of Liebherr-Transportation Systems GmbH & Co KG.

THREE INDEPENDENT MODULES

Celsineo is characterised by a number of technical features that are unique in the field of trailer cooling systems in this form. For example, it has a modular design: The system distributes the cooling capacity to three equally structured plug-and-play refrigeration modules, each of which has a self-sufficient refrigeration circuit and can all be controlled individually, thus enabling a varied control strategy. This raises efficiency in the entire operating range to a completely new level.

The modular temperature control also ensures continuous cooling performance. This ensures high efficiency both at full load and at partial load operation, which is frequent in practice. Cooling and defrosting are possible simultaneously with Celsineo: two refrigeration modules cool and one is in defrost mode. This effectively minimizes the dreaded temperature peaks during defrost cycles and ensures a permanently stable temperature curve that keeps goods at the ideal temperature.

SERVICE RETHOUGHT

Service and maintenance of the trailer and cooling unit can be carried out with Celsineo during a single visit to the workshop: the One-Stop-Shop principle. This one-stop service offers real added value, as there is no need to visit different workshops. A certified refrigeration technician is not necessary. Thanks to its hermetically sealed refrigerant circuit and extremely low refrigerant volumes (only 1.15 kg per refrigeration module), Celsineo does not require annual leak tests of the refrigerant circuit, as is the case with conventional refrigeration machines. This significantly shortens waiting times and downtimes and maximises operating time. Celsineo uses the dense Krone service network

in Europe, which will be equipped with Celsineo service competence. Numerous Krone service partners along Europe's main traffic routes are already Celsineo certified.

FUTURE-PROOF TECHNOLOGY

The Celsineo refrigeration modules are designed for operation with the ozone-friendly refrigerant R452A, which has a low global warming potential (GWP). It complies with the F-Gas regulation for 2020, can be used in the long term and is safe. The diesel engine is dimensioned so that no expensive, maintenance-intensive and weight-increasing exhaust aftertreatment is required.

Celsineo is a further step on the way to consistently focusing on customer needs and requirements of the international markets: "Krone and Liebherr complement each other due to their strengths, technological leadership and market presence," says Dr. Frank Albers, Krone Managing Director Sales & Marketing. "For customers, the cooperation means above all a strong product that offers them many advantages in everyday life: Celsineo is a completely new class of cooling systems whose performance potential sets standards and raises efficiency in the entire operating range to a new level".

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Liebherr - a pioneer in trend-setting innovations

The Liebherr Group is active in numerous sectors around the globe. For 70 years, Liebherr has stood for a wide range of sophisticated products and services. The company, for example, has extensive technical and development expertise in the areas of refrigeration, air conditioning, electronic systems, electrics and actuation. Household refrigeration systems, deep-freeze systems for retailers and refrigeration units for transport logistics enable Liebherr to provide a secure and reliable overall cold chain.

Krone - the first choice for refrigerated semi-trailers

Krone is one of the leading manufacturers of truck trailers and semi-trailers in Europe. Krone's refrigerated semi-trailers provide the right solution to every kind of transportation task in temperature-controlled road transport. The company has a reputation for sturdy and robust design right down to the smallest detail and is also highly cost-effective.

Contact person Krone

Stefan Oelker
Head of Marketing
Fahrzeugwerk Bernard Krone GmbH & Co KG
Telephone: +49 5951 209-211
E-Mail: stefan.oelker@krone.de

Contact person Liebherr

Ute Braam
Corporate Communications
Liebherr-Aerospace & Transportation SAS
Telephone: +49 8381 46 4403
E-Mail: ute.braam@liebherr.com

www.celsineo.com

Picture caption:

Manfred Handl, Head of Marketing & Sales Commercial Vehicle der Liebherr-Transportation Systems GmbH & Co KG.



Dr. Frank Albers, Krone Geschäftsführer Vertrieb & Marketing



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Krone Trailer mit Celsineo Kühlaggregat 2019_03_07DSC07248.JPG



Krone Trailer mit Celsineo Kühlaggregat 2019_03_07DSC07381.JPG

