Cooling Experts Around the Globe

Cooling Modules and Cooling Systems for Agricultural and Forestry Machinery

Cooling Systems for Agriculture and Forestry Machinery

AKG Green Thermal Solutions.

Thermal Solutions For A Sustainable Future

AKG supports the decarbonization of the global economy with efficient cooling and thermal management systems for alternative drive concepts and clean energy in selected industries, such as wind energy, electronics and fuel cell cooling. It has always been our goal to improve thermal solutions, starting in 1919 with automotive cooling, through the cooling of combustion engines in different applications until today's Green Thermal Solutions. We believe that we can support our customers all over the world to meet their "net-zero" emission targets.

,,AKG Green Thermal Solutions is our approach to creating a sustainable future."

Sustainable Mobility

Our Thermal Management System is an innovative solution that increases battery life by maintaining the optimum temperature needed for the battery. Heating and cooling modes ensure a complete thermal control for all of the temperature sensitive components built into the vehicle. The thermal management of the complete system includes the battery, E-motor, power electronics, transmission system, driver's cabin and much more. We are working closely with our customers and partners for prototypes, validation and global manufacturing. With our optimal cooling and heating solutions, we not only increase the safety but also the range of electrified vehicles and thus contribute to a more sustainable future mobility.

Benefits

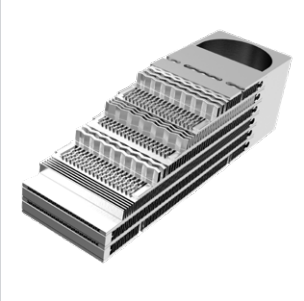
- Extended range
- Increased battery life
- Fast charging
- Full climate control
- Environmental friendly refrigerant

We help you to achieve your goals

- System supplier for innovative high performance cooling systems
- Global presence with local production and regional engineering support
- Family-run, reliable and durable
- Extensive testing equipment and cutting-edge measurement technology
- Integration of components into ready-made Plug&Play solutions
- New ways to simplify assembly and logistics for our customers
- Complete responsibility for modules and systems
- Advanced project management (APQP)

Cooling Systems for Agriculture and Forestry Machinery

AKG PRODUCT RANGE

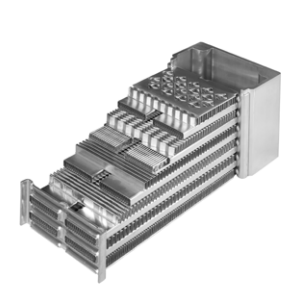


Aluminum / plate construction

- Flexible configuration
- Versatile applications
- High pressure resistance

TubeFin Radiator

- Robust construction
- Deep cores
- Weight optimized



TubeFin Charge Air Cooler

- Robust construction
- Deep cores
- Weight optimized

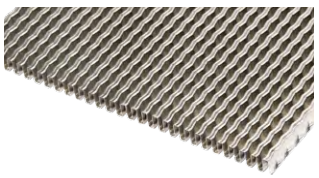
LightWeight Cooler

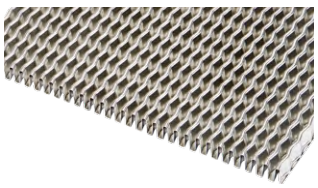
- Fully brazed, no welding
- Light weight & robust construction
- High performance
- Less manufacturing lead time

Product details

- Customer specific design
- Low tooling costs
- Short time to market with proven component options
- Optimized costs and space claim
- Side-by-Side arrangement
- Global availability
- Cost effective
- High cooling capacity
- Aluminum header tanks
- Highly flexible dimension
- Long lifetime
- Clogging resistant

Cooling Air Fins





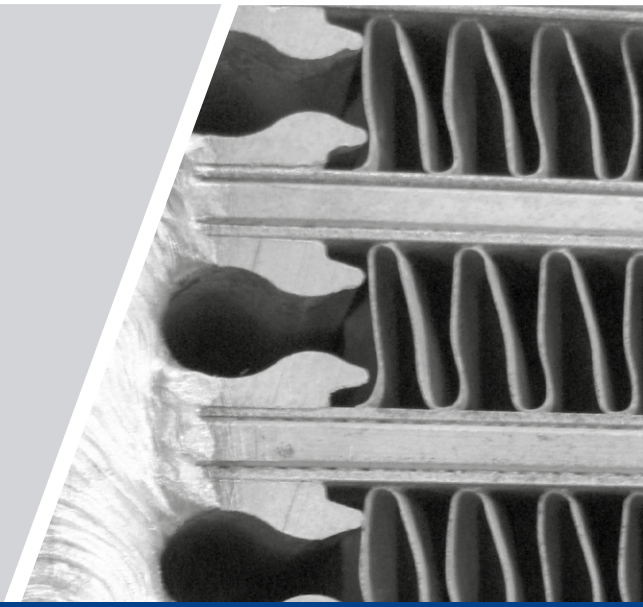
- Strong
- Resistant to clogging
- Easy to clean / maintain
- High efficiency
- Durable

Flexible AKG Hollow Profile

In many coolers AKG uses hollow profiles to reduce local peak strains. This way the strength of heat exchangers is significantly increased and their service life time considerably prolonged.

AKG Hollow Profile Features

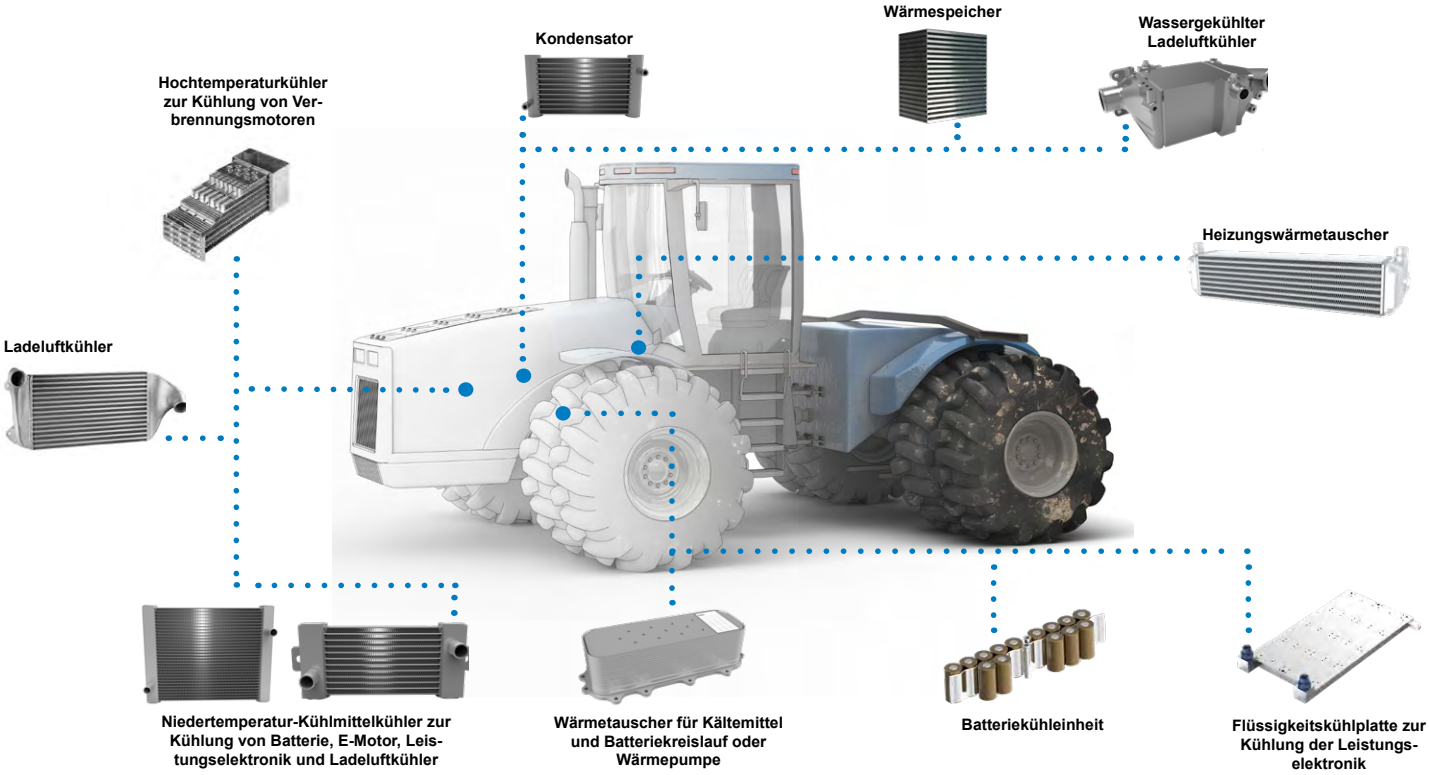
- **Reduced Strain:**
  Strength calculations show that when using AKG hollow profiles maximum strain is reduced by a factor of 2
- **Prolonged Service Life Time:**
  Extensive rig tests have shown that the service life time increases by a factor ranging from 3 to 5



Cooling Systems for Agriculture and Forestry Machinery

AKG COOLING SOLUTIONS

Development of new innovative cooling solutions for use in hybrid and electric vehicles



Thermal Management System for Electric Vehicles

Maintaining the optimum temperature of the battery and further temperature sensitive components can be done either with our chiller or with our Thermal Management System. The chiller is using an air-cooled condenser and an optional high voltage heater. With our Thermal Management System and the intelligent controlling, we are able to reduce the energy consumption by 15-30% and thereby reduce battery size or significantly extend the driving range / working time especially in cold weather conditions.

Hybrid Cooling System

We see the hybrid system as a combination of a battery electric drivetrain together with either an internal combustion engine or a fuel cell system. The energy produced by the internal combustion engine or the fuel cell will be used for the drivetrain and/or for charging the battery, which enables the hybrid vehicle to have a higher range than a battery electric vehicle. Due to the various amount of cooling components, we are always looking for synergies of both systems and therefore the highest overall efficiency.

Cooling Systems for Agriculture and Forestry Machinery

FORAGE HARVESTER

Smoothly functioning harvesters yield highly efficient harvesting performance.
AKG cooling systems provide cooling air fins with high specific cooling capacity and resistance to clogging from contamination. The custom engineered **AKG cooling systems** are characterized by high operational reliability with optimized weight.

SELF PROPELLED SPRAYER

Ready-to-install **AKG cooling systems** provide for the ideal custom cooling. Sickle fans available for low noise applications. Cooling airfins that are resistant to clogging are available. System is custom engineered to balance thermal management and reduce fuel consumption.

Cooling Systems for Agriculture and Forestry Machinery

FOREST MACHINERY

Compact **AKG cooling system** consisting of Charge Air Cooler, Radiator and Hydraulic Oil Cooler in “Side-by-Side“ arrangement. Debris resistant cooling air fins ensure optimum cooling even under difficult conditions. Reduced fuel consumption by optimizing design of charge air cooler, radiator and hydraulic oil cooler to insure balanced heat management.

HARVESTING

Unfavorable weather and soil conditions are often key factors in beet and potato harvesting. **AKG** offers optimized **cooling systems and components** for these applications. High specific cooling capacity, resistance to clogging and high mechanical durability offer the best conditions for trouble-free harvesting in the field.

Cooling Systems for Agriculture and Forestry Machinery

TRACTORS

Custom engineered, weight optimized solutions are ready for installation. Cooling systems are optimized to balance heat rejection while reducing fuel consumption. **AKG** offers **„Side-by-Side“ cooling systems** and utilize airfins with a low susceptibility to clogging. Airfins are made from thicker material to endure pressure washing.

MOWER CONDITIONER

Different applications have different requirements. **AKG cooling systems** can be equipped with different cooling air fins and be optimally adapted to the application, so that an optimum ratio between weight, cooling capacity and low susceptibility to contamination is achieved.

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AKG GROUP – A STRONG GLOBALLY REPRESENTED COMPANY

AKG is a leading global supplier of high-performance coolers and heat exchangers, providing custom system solutions with the highest quality standards.

Around the world 3,150 employees work at 11 manufacturing facilities located in Germany, France, Latvia, Turkey, the USA, Mexico, Brazil, China and India. Together with a number of sales offices in additional countries and regions, AKG's cooling experts are on duty around the clock.

Longstanding partnerships with global OEM customers from 24 lines of business - including construction machinery, compressed air systems, agricultural and forestry machines, and many others - give fresh and innovative inspiration for AKG's line of pre-engineered cooling systems as well.

AKG operates one of the world's largest research, development, measurement and validation centres for cooling solutions and customized applications.

For over 100 years, AKG's heat exchangers have stood for innovative solutions as well as the highest standard of engineering and manufacturing expertise.