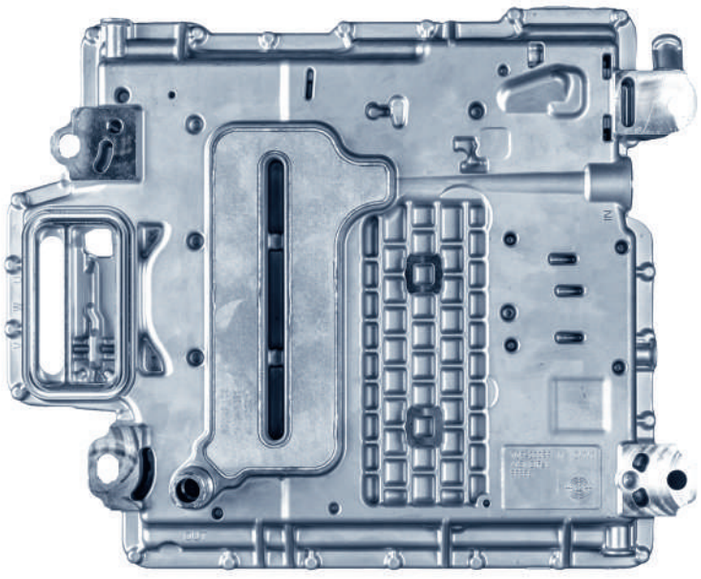

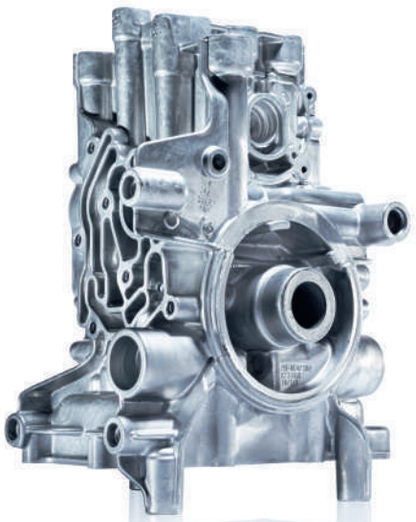

Die Casting Solutions

EN

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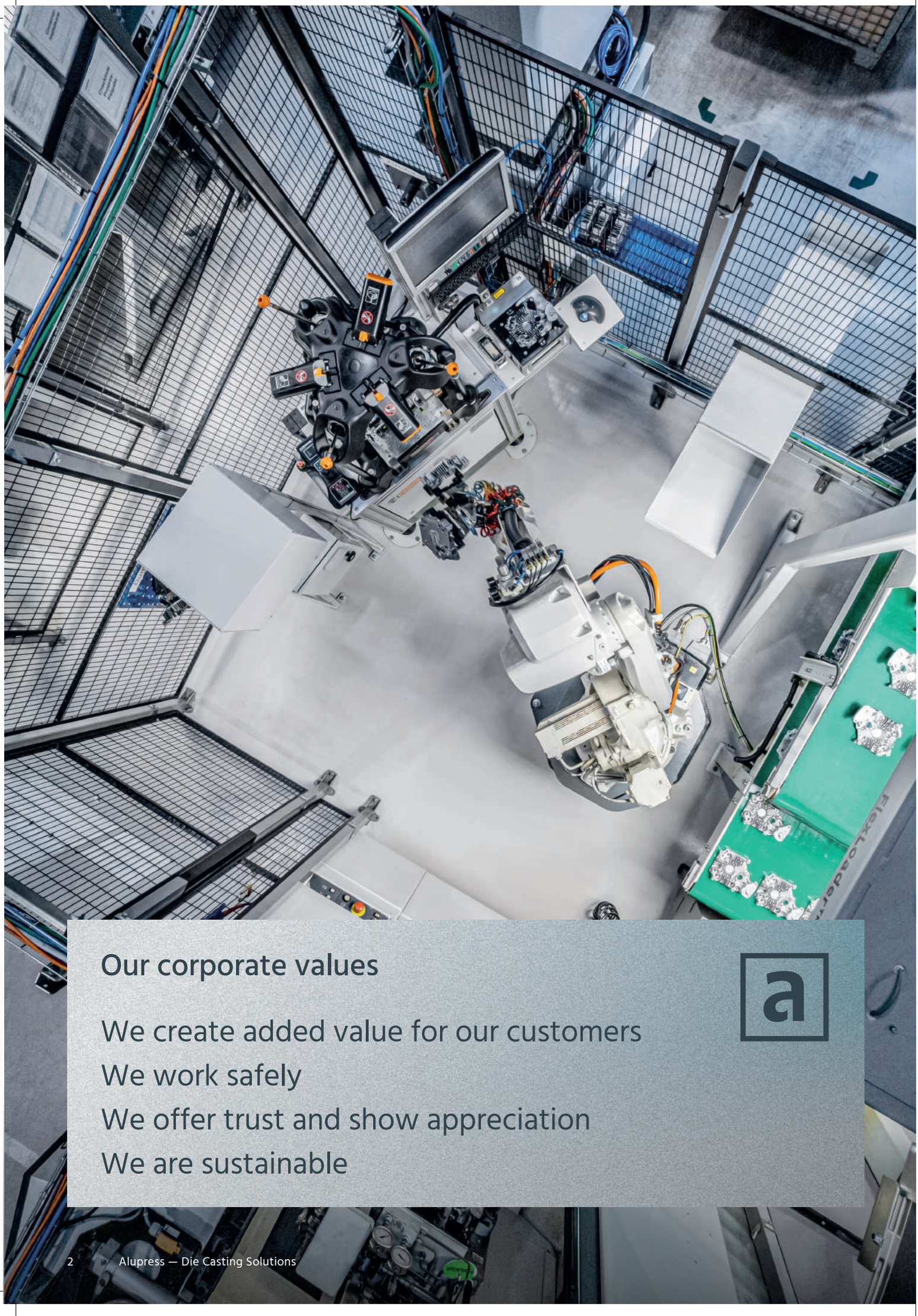


Our corporate values

We create added value for our customers

We work safely

We offer trust and show appreciation

We are sustainable

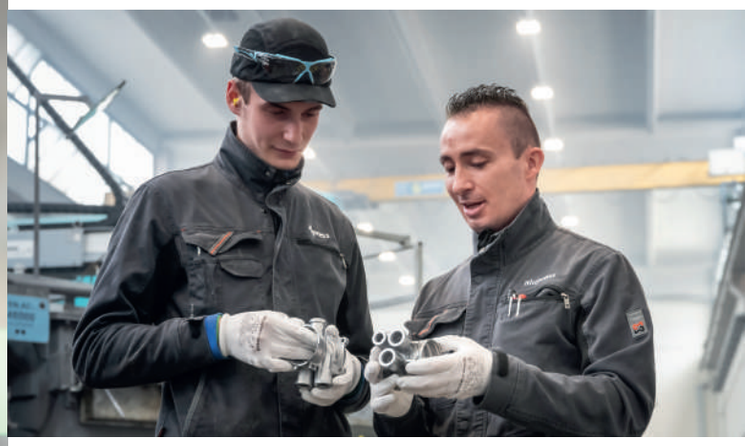
Alupress has been a supplier to the automotive industry since 1965. We specialize in complex and precise die cast components made of aluminum and thixomolded components made of magnesium.

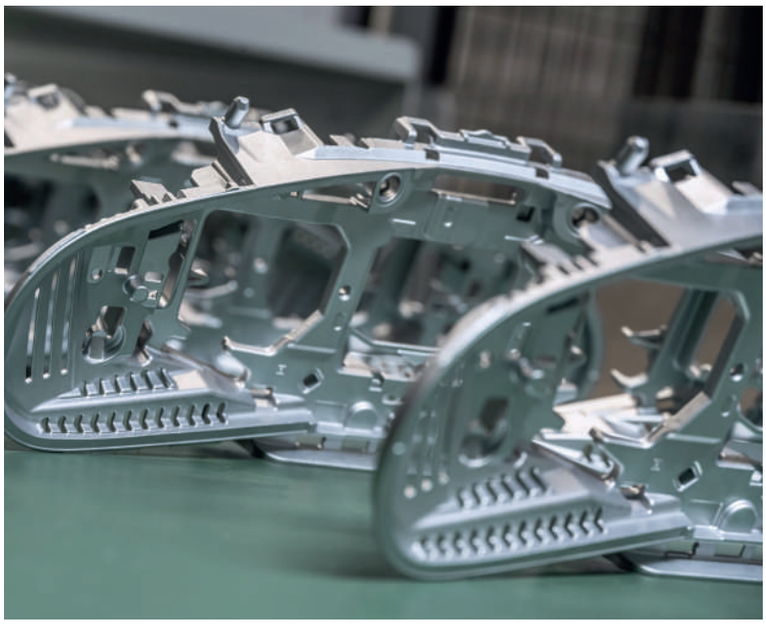
As a full-service provider, we offer everything from a single source and have extensive process know-how.

Our production plants are located in Italy, Germany and the USA. We are part of the financially strong Technicon Holding, which gives us long-term stability and the freedom to plan and act with confidence.


alupress

Process technology
Aluminum die casting





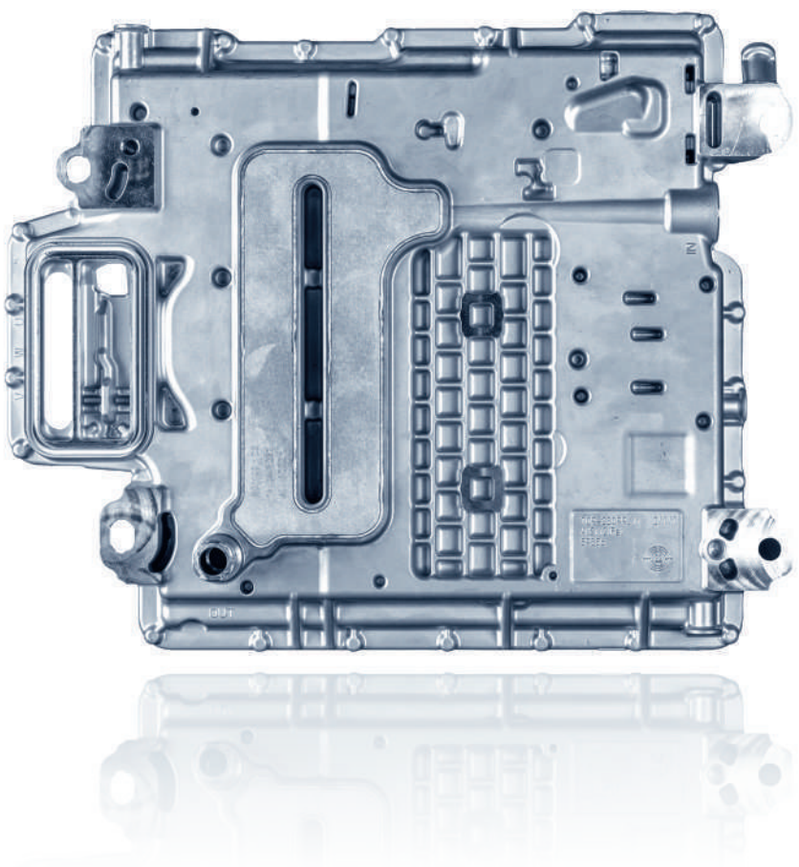
Alupress produces aluminum die cast components of the highest precision and quality. In-house simulations before the start of the project, sophisticated tool design and in-house tool production, combined with minimum quantity spraying in the casting process, bring measurable added value for our customers.

This makes it possible to meet even the highest requirements for sealing and component properties such as bonding, painting and adhesion capacity.

Only through trustworthy, partnership-based cooperation and by merging customer and supplier know-how can we create technically mature products that will also succeed on the market.

Stefan Ploner, CTO Alupress

Field of application
Car

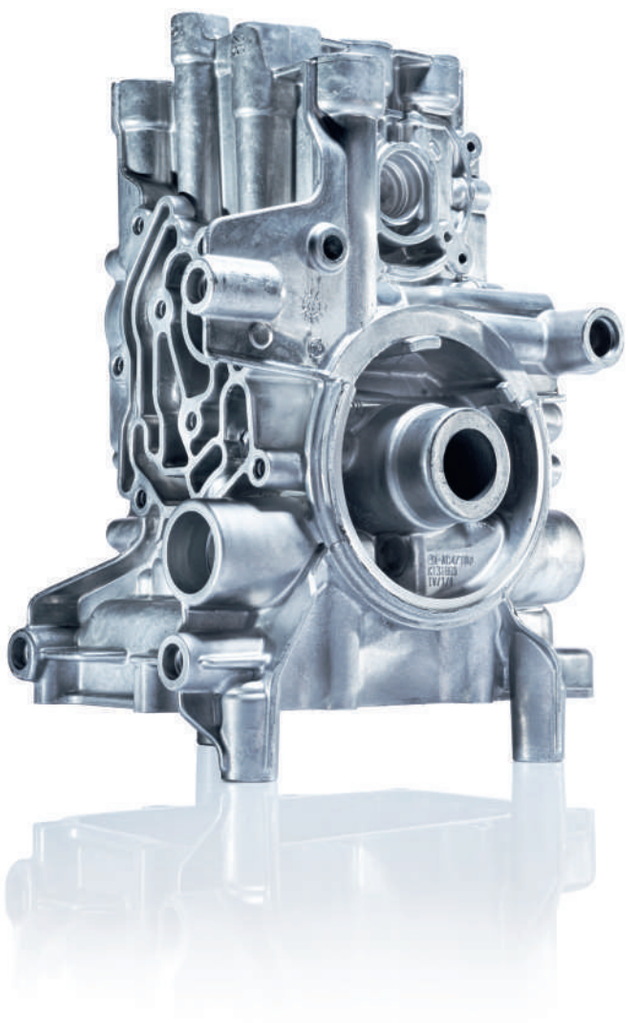


Housing with subassemblies for power electronics in electric vehicles

The illustrated component shows the housing for the power electronics of electric vehicles. The power electronics are mounted directly onto the axle and convert the direct current from the battery into alternating current for the electric motor. The power electronics, electric motor and multi-stage gearbox, including differential, are integrated into a highly compact unit.

For this product sector, Alupress produces installation-ready, high-purity components for a power range of 400 – 800 volts. Functional component surfaces are cast and, in addition to the assembly phase, **die cast aluminum is also laser-welded**. This technology enables savings on assembly parts and costs and, at the same time, reduces component mass, thus contributing to reducing CO_2.

Field of application
Truck



Housing for air circulation in braking systems for trucks and buses

The illustrated component shows the housing for an electronic air dryer with intelligent compressed-air management. Compressed air from the compressor is cleaned, moisture from the braking system is eliminated and oil is separated. This supplies the braking system with compressed air which is suitable to ensure safe braking.

All of these product functions require pressure-tight casting after processing. Mechanically machined surfaces must be free of pores and cavities in order to ensure adequate sealing. Alupress achieves all this without impregnation, thanks to our wide-ranging expertise, the use of all technologies now on the market and intensive collaboration with customers in product development.

Process technology
Magnesium thixomolding

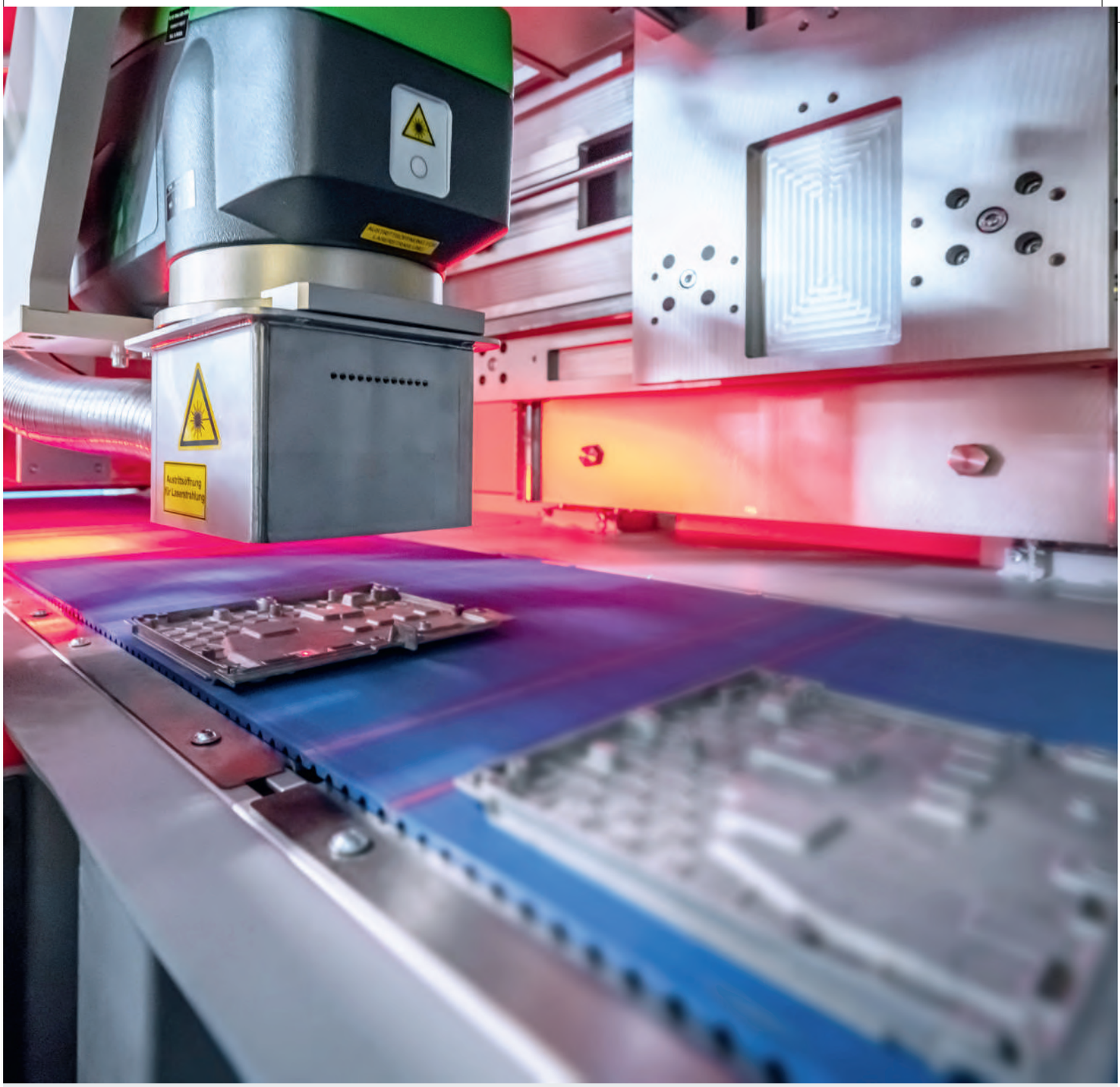
Magnesium parts are approx. 33 % lighter than aluminum parts of the same volume. For components, where weight plays a role, but plastic cannot be used (e.g. on account of thermal conductivity), magnesium is a suitable alternative.

The magnesium thixomolding process makes it possible to produce components even more precisely and with thinner walls than with conventional magnesium die casting. It should also be emphasized that the environmentally harmful protective gas from conventional die casting is completely avoided. This technology also minimises fire risks.

In addition to the massive weight saving, magnesium – like aluminum – offers complete recyclability.

Magnesium – processed by means of thixomolding – is of particular value for interior applications in the automotive sector. This process is however also an attractive solution for other mobility sectors and non-automotive markets.

Stefan Ploner, CTO Alupress



Housing components for a high-performance on-board computer

The thixocasting component illustrated here forms part of a three-part housing for a high-performance computer replacing numerous control units (driver assistance systems, infotainment and computer center for drive and chassis functions).

Magnesium thixomolding is the ideal procedure for complex, thin-walled geometries such as on-board computers or internal components. Given its reduced heat input, thixomolding also leads to a correspondingly longer tool lifespan.

Full-service system solutions: in-house development, consulting, project management and production from a single source

As a full-service partner, we accompany our customers from the initial technological idea to the end of production. Thanks to our in-house know-how and specific tools, we can provide customers with the best possible help in development consulting and project management. There is a constant focus on quality standards in all manufacturing processes.

Technological idea — Customer project — Start of production

In-house development

- New materials
- New joining processes
- Topology optimization
- Thermomanagement
- Feasibility studies
- Webinars & training courses

Development consulting & project management

- Short project realization times
- Design consulting – component design
- Component and tool simulations
- Value stream design
- In-house toolmaking (Alupress tooling)
- 3D printing of components and tool parts

Die casting & thixomolding

- Sophisticated tooling technology for highly complex components
- Close contour tool cooling through 3D printing and jet cooling
- Vacuum technology
- Minimum quantity spraying
- Multilayer coatings
- In-house tool maintenance

Certifications Automotive Standard — SPC

Grinding surface joint analyses weld seams — Optical 3D metrology

End of production

Supply chain management, customer arrangement and order processing

Series production – Alupress production system

After-market

Surface finishing	Machining	Component assembly	External added value	Cleaning	3D-Print
Vibratory finishing machines	Multi-spindle machining centers	Automated assembly lines	Arranging	Water-based cleaning	
Shot blasting machines for aluminum and magnesium	Manufacturing islands with inter-linked additional processes	Laser welding	Powder coating	Inline process monitoring of cleaning parameters	
	In-house tool maintenance	Bonding	Anodizing	Conversion coatings for bonded parts	
		Automated testing and labeling cells	Heat treatment	Alcohol-based cleaning	
		Supplier management	Impregnation	Residual dirt laboratory	
		In-house tool maintenance		Clean room	

Complaints management CT analyses

Laboratory Problem-solving methods

Quality

Our full-service production offer

In-house toolmaking

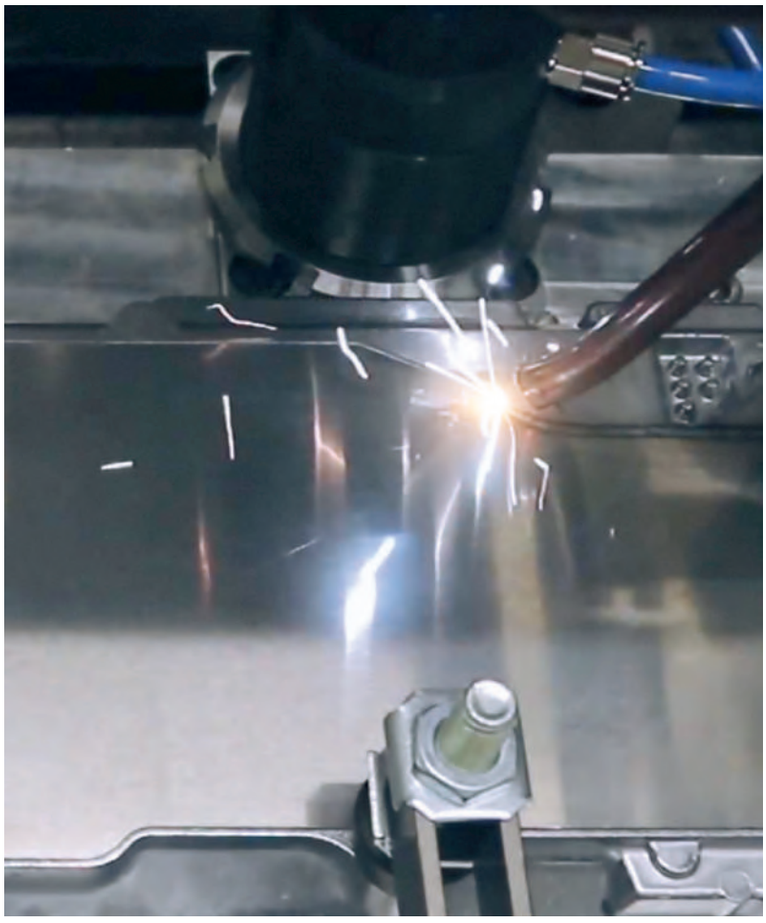
Alupress Tooling is the toolmaking division of the Alupress Group and as such is equipped with state-of-the-art automated machinery. Our technologically complex tools are manufactured exclusively for the production plants of the Alupress Group: our customers appreciate this independence from third-party suppliers, especially when it comes to deadline-critical tools and high-runner projects. We continuously strive to increase the output and service life of our tools.

Surface finishing: the starting point for constant component cleanliness

Blasting machines with suitable blasting material remove even the last flaky burrs visible to the eye. The encapsulated vibratory finishing systems give the components their final polish.

Precision in casting continues in machining

The die cast parts are machined using state-of-the-art production technology in single- or multi-spindle CNC machining centers. Automation and interlinking, both of further production steps and testing, are designed to ensure maximum flexibility at all times.



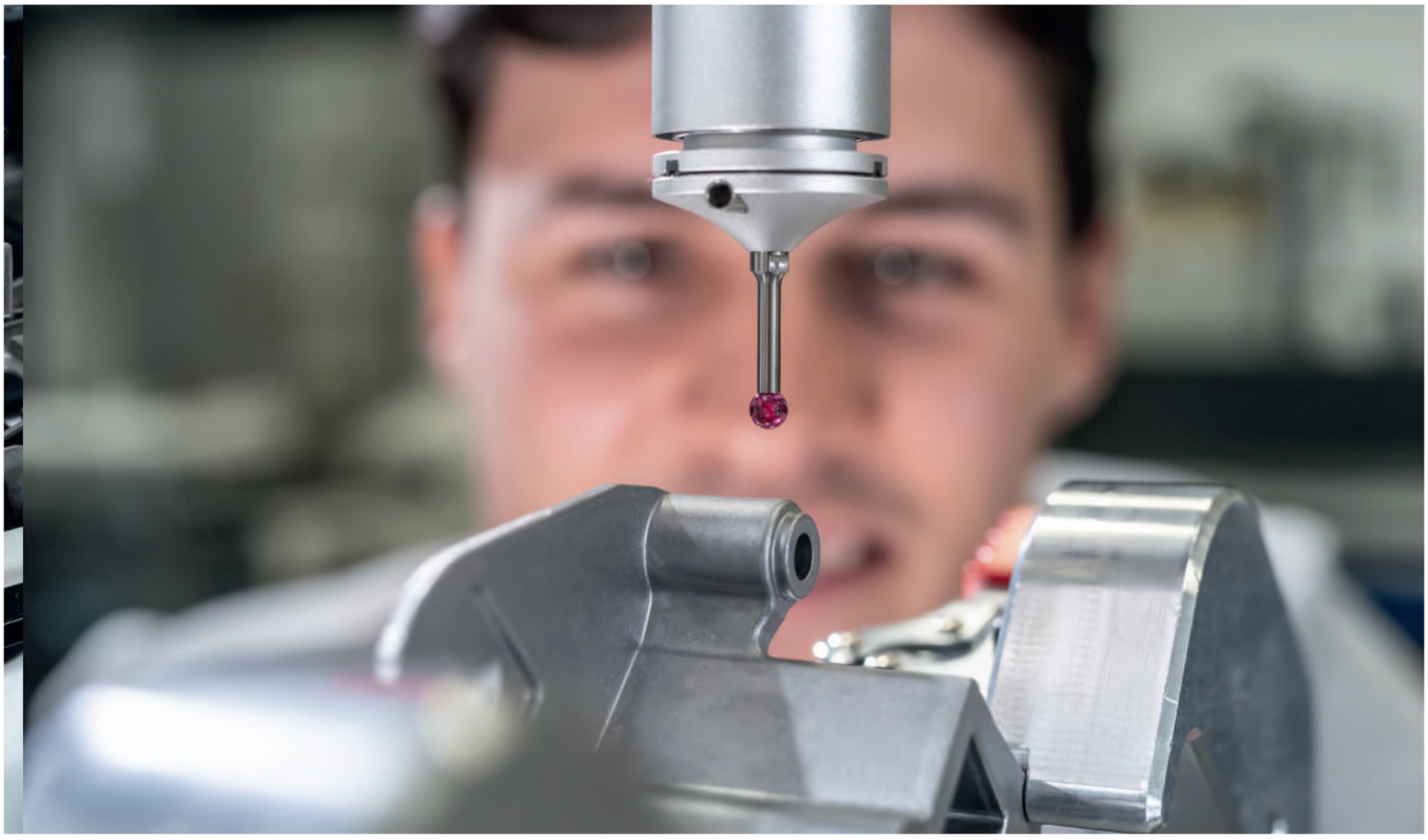
Automated assembly and laser welding as a safe jointing process

The components are further honed on customer-specific assembly lines. Sophisticated **jointing processes** not only save money on purchased parts and assembly steps: they also reduce environmental impact.

Our newly implemented **laser welding process** means not only good dimensional stability, but also significant weight savings compared to conventional jointing techniques, such as friction stir welding (FSW). Only after error-free testing on standardized equipment will our components receive a corresponding marking for traceability.

External value creation expands our range of services

Customer value is our top priority. Our supplier management reliably secures both our purchased parts for assembly and outsourced contract manufacturing (e.g. coatings or heat treatment).



Quality and a zero-defect strategy are our top priorities

We achieve the highest quality by continuously improving all process steps and areas. Our strict focus on quality is emphasized by our certification to IATF 16949, a standard covering the automotive industry supply chain, as well as our adherence to common industry regulations.

Our automatically process-monitored washing systems meet the latest technological standards. They enable us to produce parts that can be glued, bonded or painted. We use environmentally friendly washing media that are based on water or alcohol.

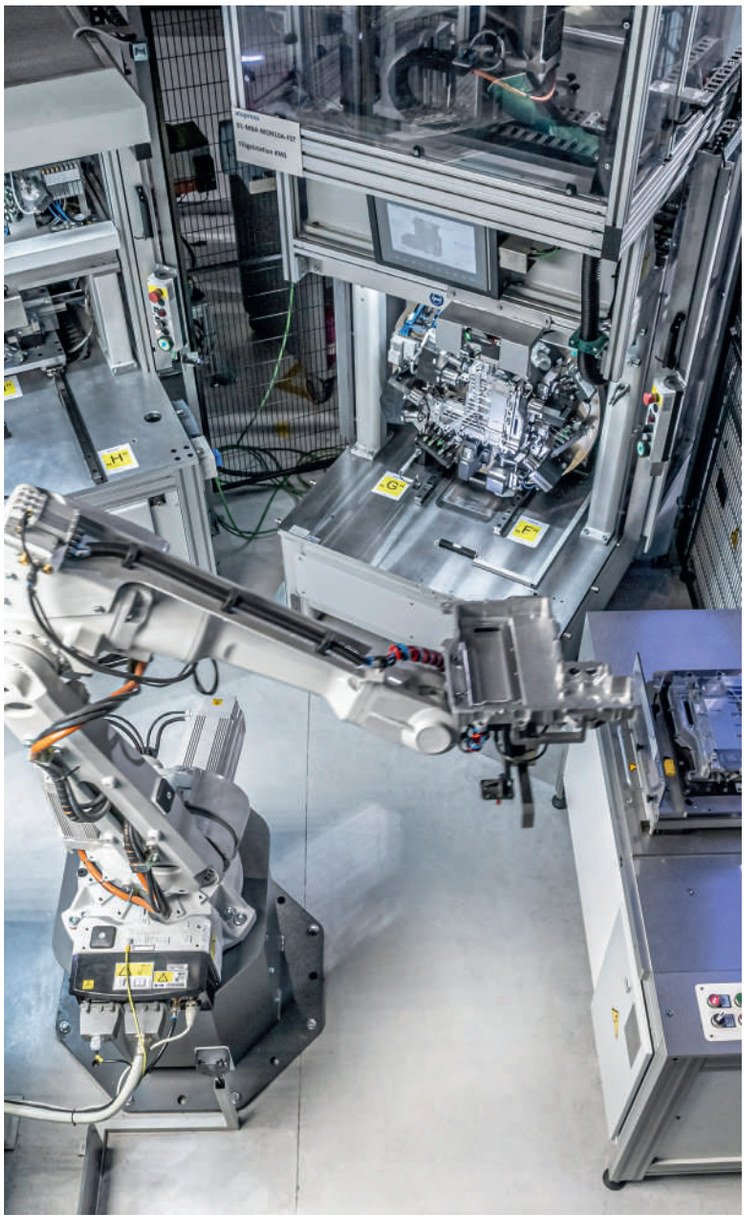
Our modern laboratory, set up in accordance with international guidelines for technical cleanliness (VDA 19/ISO 17025), ensures that we can keep our promises to customers. Various laboratory tests permit a qualitative assessment of the processes on the end product, such as the technical cleanliness, film residues or adhesion and bondability.

Know-how

People and know-how

At Alupress, our employees are the people at the very heart of our activities and actions, because they are the guarantee of our success and reputation. We also invest in further training and set high social standards.

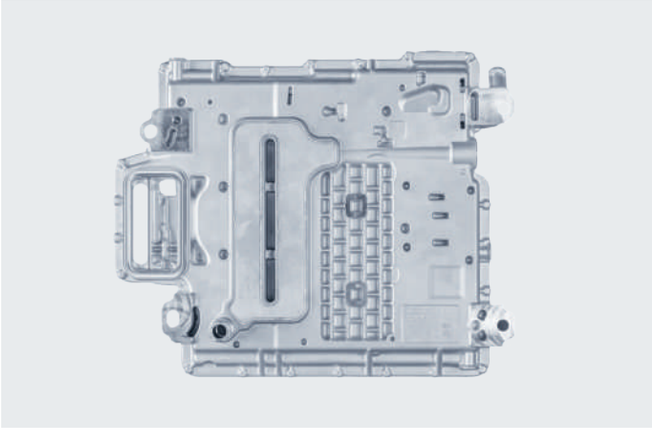
Facilities and technologies



We possess the latest production facilities and technologies so as to turn concepts into innovative solutions and products for large-scale series production.

Proven technologies

Welding solutions



Power electronics housing (with welded cooling channel)

We apply laser-beam welding for our components used in e-mobility to meet our customers' requirements for lightweight products that offer cost-efficiency and better thermal performance.

The following advantages are available with the laser welding process, offering all-round increased performance:

+ Reduction of welding cycle time by a factor of 5 to 10 compared to standard solutions

+ Potential for lightweight design with weight reduction in the order of 30 % through the use of laser beam welding

+ Cost-efficient, scalable production

+ Possibility of welding conductive inserts

Cooling Solutions

Two-sided diecast cooler with conductive inserts

Our solutions improve the thermal performance of products. Cast elements are combined with extruded, 3D-printed, impact-extruded or sintered components so as to ensure improved thermal performance.

Our cooling solution offers the following advantages:

+ Up to 30 % improved thermal resistance at the contact points to electronic assembly

+ Up to 60 % improved conductivity in the area of cooling banks through laser welding of conductive inserts

+ Up to 70 % reduction in CO_2 footprint compared to conventional cooling solutions through the use of secondary alloys

Sustainability in all areas

Ecological

We invest in sustainable and autonomous technologies so as to cover our medium-term needs in a CO_2-neutral and ecological way. We are accordingly striving to increase our energy savings and to use renewable forms of energy.

Social

It is very important for us to make sure that our employees feel happy with us over the long term. We therefore maintain a strong focus on safe working conditions, equal opportunities, market-oriented remuneration and life-work balance.

Economic

As a commercial company, we are growth and profit-oriented in order to ensure our continued market success into the future. This is why we believe in long-term partnerships with customers and suppliers as well as safe and fair working conditions. Our financial independence not only enables us to invest in innovative technologies and sustainable structures, but also to respond quickly and flexibly to the needs of our customers and employees.

Join our team

At Alupress, we develop solutions that shape the future. Join a team where collaboration opens up new paths and enables innovation. Your ideas. Your impact. Your future – together with us.

- Flexible work models
- Company health benefits
- Career trainings
- Development opportunities
- Company events
- Additional bonuses

... and many more.

Are you interested?
Visit our careers page and find out about vacancies, internships or invitations for diploma theses.
Unsolicited applications are also welcome at any time.
www.alupress.com/en/career

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