

HAILTEC



Prototypes
& Series

LAMINATIONS & BUSBARS

for NEXT GEN Mobility

RESOURCEFUL AND EXPERIENCED IN E-MOBILITY

You need electrical sheets with $\pm 5 \mu\text{m}$ tolerance, busbars without thermal influence, and cell connectors for battery modules – from a supplier you can trust 100 %. With many years of experience, we manufacture electrical sheets for renowned OEMs and Tier-1 suppliers. Our specially built dual-head laser cutting system combines precision and cost-efficiency in fully automated 24/7 operation. As part of the Consydera Group, we, together with Aussafer, form the European technology hub for Next-Gen Mobility. With currently 35 laser cutting systems in the group – six of them at HAILTEC – we have the capacity to meet the demand.

The new standard for electrical sheets: dual-head power for Next-Gen Mobility



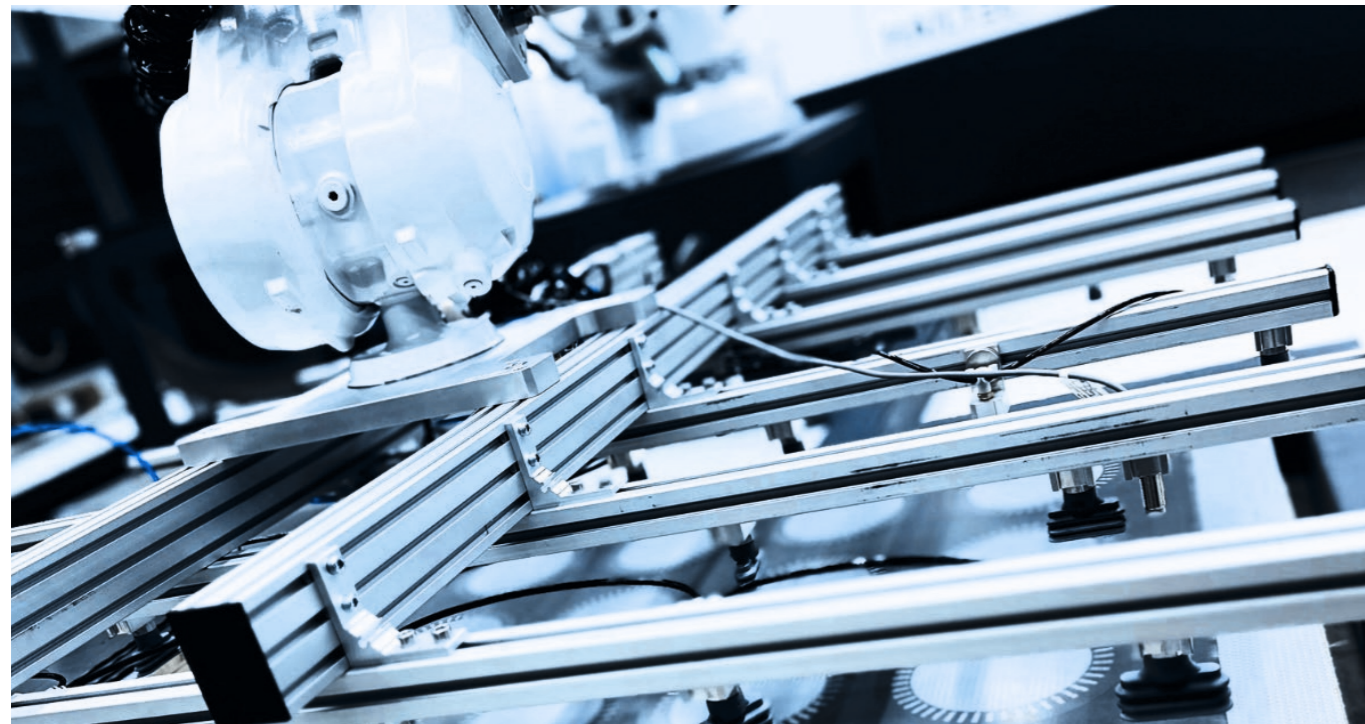
Fast from inquiry to finished part



Broad technology portfolio



Fully automated 24/7 production



CONTENT

5 Good Reasons for HAILTEC
Page 3

Technology portfolio for NEXT GEN Mobility
Page 4

Machine in Focus
Page 5

Application Areas
Page 7

Quality and Measurement Laboratory
Page 13

Success Storie
Page 14

Company Overview
Page 15

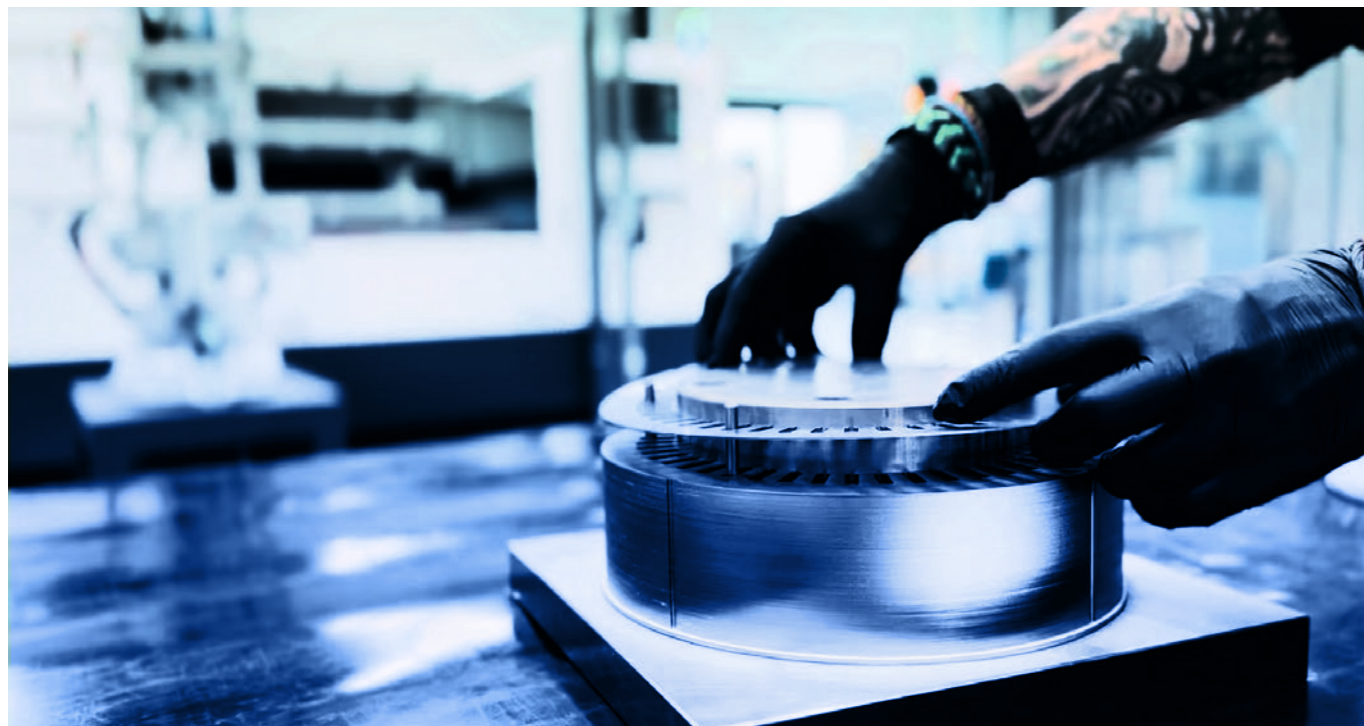
HAILTEC as part of the Consydera Group
Page 18

5

Good Reasons for HAILTEC

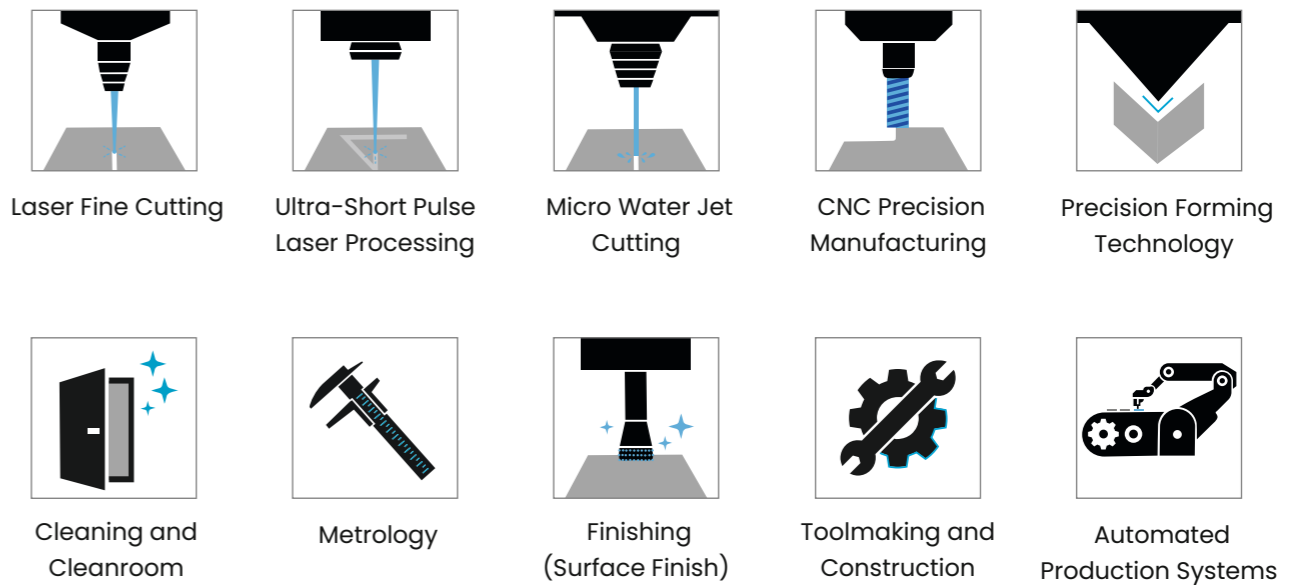
1. Specialized in cutting and milling custom components for e-mobility and Next-Gen Mobility
2. Unique technology portfolio including fine laser cutting, ultrashort pulse lasers, micro water jet cutting, and in-house toolmaking
3. Reliable processes, automatable and scalable from quantities of 1 to 1,000,000
4. Short and binding delivery times
5. Comprehensive service from manufacturability analysis and consulting, through prototyping, to ready-to-install series production

**Technological expertise + high degree of automation
= your competitive advantage**



HAILTEC

TECHNOLOGY PARK FOR NEXT GEN MOBILITY





CUSTOM-MADE DUAL-HEAD LASER CUTTING SYSTEM

BUILT TO CUT ELECTRICAL SHEETS

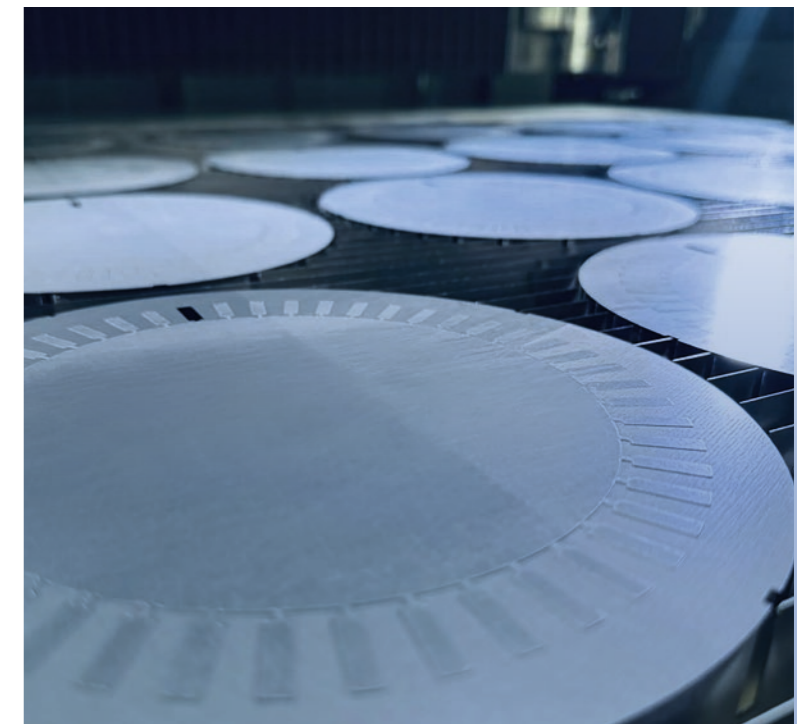
For more than two years, we worked closely with the machine manufacturer to refine this unique system: the dual-head laser cutting machine combines precision and cost-efficiency for the first time. It produces electrical sheet prototypes and small series with unmatched quality.

DUAL-HEAD POWER FOR NEXT GEN MOBILITY:

- + $\pm 5 \mu\text{m}$ cutting tolerance
- + Cost-efficient, highly precise, and material-friendly
- + For thin sheets from NO10 upwards
- + Burr-free or minimal burr: $< 3 \mu\text{m}$ cutting burr – reproducible and scalable
- + Two laser heads operate fully automated in multi-layer mode
- + Single-mode laser for maximum beam quality
- + Small spot size for minimal thermal impact
- + Large working area for sheet formats up to 1250 × 1250 mm

Two laser cutting heads work synchronously in fully automated 24/7 operation.

The result: your electrical sheet prototypes and small series are produced faster, more efficiently, and with higher precision.



STATOR AND ROTOR LAMINATIONS

We specialize in electrical sheets – from single Laminations to precise stacks, from lot size 1 to series production. With our fine laser cutting centers, we cut stator and rotor sheets with high precision, achieving burrs smaller than 3 μm and minimal thermal impact. Depending on the application, we also use wire erosion or combine both methods.

A unique support system keeps geometries stable during laser cutting, ensuring perfectly fitting laminates. Even small deviations accumulate during stacking. For us, reproducible stack accuracy begins with the individual laminate – from the very first μm . We design and manufacture the stack tools and fixtures ourselves in our in-house toolmaking workshop.

Lower costs: Save on material and production costs thanks to automated, reproducible production processes.

Faster turnaround Short lead times thanks to a large material inventory and well-established supplier relationships.

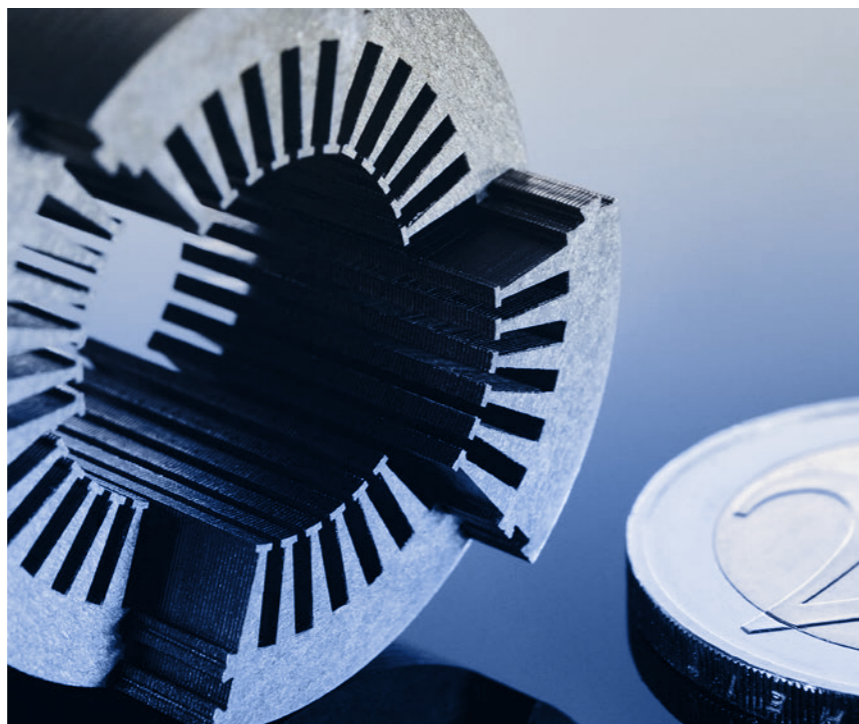
Complete sheet packages: Cutting, stacking, welding, and bonding – including in-house toolshop and design.

⊕ Electrical sheets
0.05 - 1 mm in stock

⊕ Cutting tolerances
+/- 0.005 mm

⊕ 24/7 automated
machine loading

⊕ Stack precision in
the μm range



⊕ Stack in production



APPLICATION AREAS



BUSBARS

We cut busbars according to material thickness with pulsed fiber lasers or micro water jets, achieving results similar to those busbars later punched in series. The gentle, cold separation process is ideal for temperature-sensitive materials, such as 5 mm thin busbars made of pure copper. This way, you get distortion-free and precisely cut busbars without thermal impact.

Exact results: The cold micro water jet allows for edge roughness of up to 0.8 Ra μm on the surfaces of your copper busbars.

Complete components: On CNC machining centers and swivel bending machines, we take care of forming and machining your busbars. We deliver ready for installation, with coating on request.

Short distances: HAILTEC is centrally located in southern Germany and manufactures busbars quickly and precisely to your specifications.



Flexible processes



Cutting tolerances
+/- 0.02 mm



Prototypes/samples
in series quality



CELL CONTACT SYSTEMS

We produce your cell connectors for cell contact systems of battery modules ready for installation. With fine laser cutting, hardly any heat and thus tension enters the thin material cuts made of aluminum or copper, and the parts retain their shape. The burr-free cut with pulsed laser energy ensures this.

Exact tolerances: Automated fine laser cutting guarantees smallest web widths and 1/100 mm tolerance. Precise processes minimize the risk of power losses due to surface damage at critical welding and contact points.

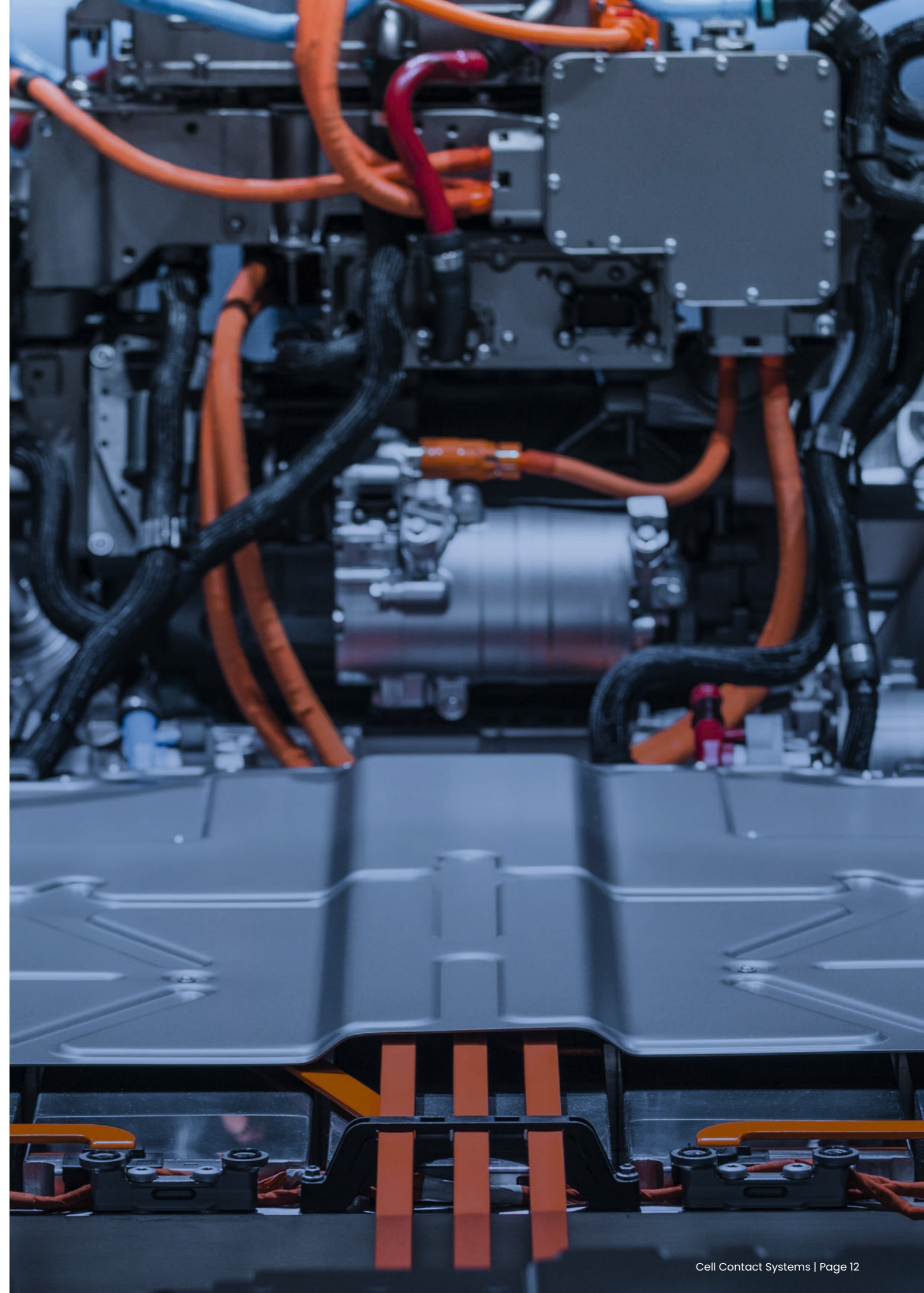
Including forming: For the production of cell contact systems, we combine laser cutting techniques with precise bending processes.

Material variety: For good conductivity, we often process aluminum, pure aluminum, copper, or Hilumin.

⊕ Extensive technology arsenal

⊕ In-house construction and toolmaking

⊕ Short lead times for your project



LABORATORY FOR QUALITY AND METROLOGY

The quality of your components is documented in black and white: Our in-house measurement laboratory provides you with the data for your quality assurance. Equipped with digital systems from Keyence to nano-accurate surface measurement in 3D from Alicona, our measurement laboratory is a pleasure for your quality management.

Optical measurement with color-coded illustration

Digital data and measurement protocols can be directly processed further

Batch traceability guaranteed

Initial sampling possible on request

Member of networks and associations



Die Werkzeugmacher

Zertifiziert nach

EN ISO 9001

Zertifiziert nach

EN ISO 13485

SUCCESS STORIES

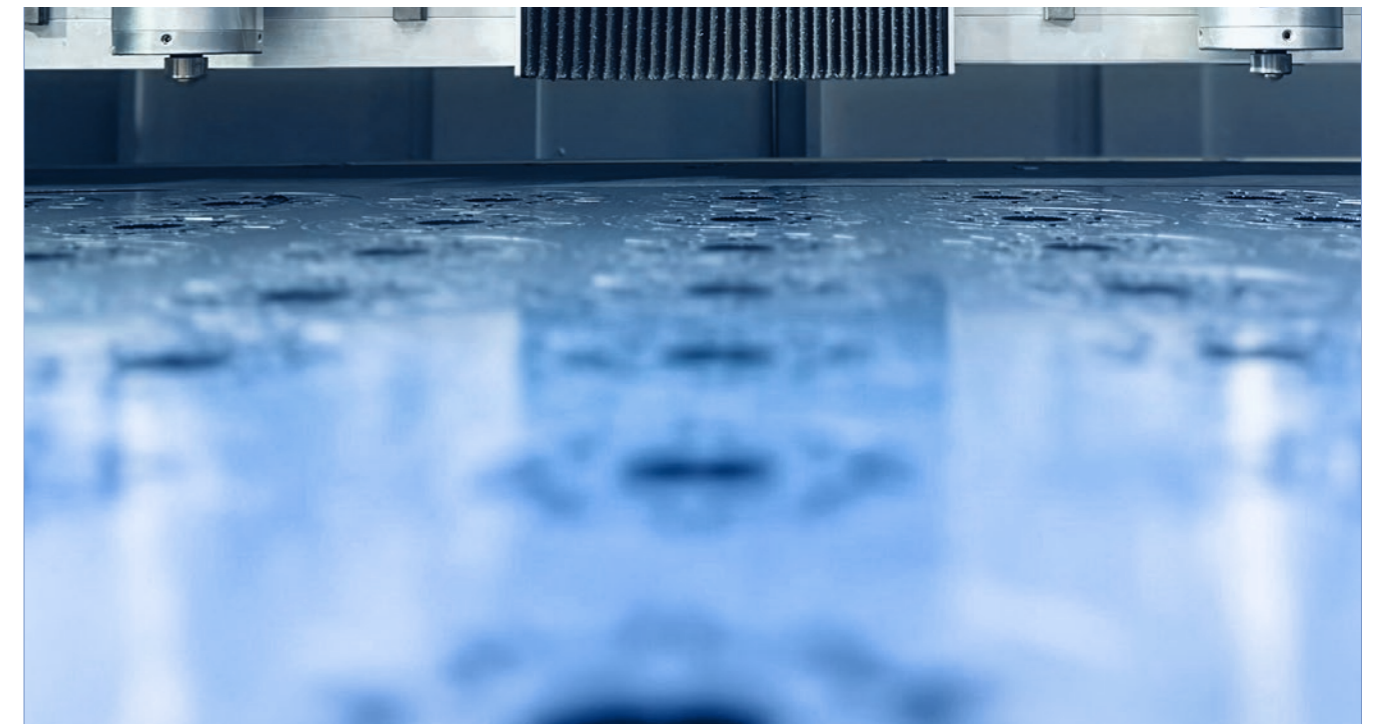
CUTTING ROTOR INSIDE STATOR

The challenge: A Tier 1 supplier in the heavy-duty sector required a recurring series of 100 sheet packages per year made from NO20 material – under immense price pressure. Every minute of production time and every gram of material counted. The conventional solution would be to cut and assemble the stator and rotor separately.

The solution: Using the custom-made dual-head laser cutting system, HAILTEC cuts the rotor directly inside the stator. The rotor's outer diameter is only 0.5 mm smaller than the stator's inner diameter, with a $\pm 5 \mu\text{m}$ cutting tolerance. The special support system keeps the geometry stable during laser cutting. Afterwards, a robot removes the parts from the machine, separates stator and rotor independently, and pallets them. This saves handling, personnel costs, and reduces scrap.

The result: Significantly fewer assembly cycles, and the customer saves about one third of material thanks to nesting (rotor inside stator). With a stack height of 150 mm, corresponding to 75,000 laminates per year, this represents a substantial economic advantage.

Note: Cutting rotor inside stator is particularly worthwhile for large volumes and recurring series. The larger the quantity, the greater the savings.



WE TRANSFORM METAL TO TRANSFORM THE WORLD

At HAILTEC, we create small parts with a big impact. Our drive comes from making a positive difference and advancing the mobility of the future. Clients turn to us because they trust both our technologies and us as people. True to our motto, "Anything but standard," we deliver precision mechanical components for electric motors as well as aerospace parts made from molybdenum, serving as both development partner and contract manufacturer.

We are bold enablers for future industries like e-mobility, where the finest components are in demand

This is in our DNA:

-  Precise
-  Courageous
-  Inventive
-  Honest



COWS OUT, LASER IN From Farm to High-Tech Hub

"Cows out, laser in" is the micro-version of our origin story. Starting in 1998, Wilfried Hailfinger built what has since become HAILTEC – converting the cow barn into a laser manufacturing facility. Today, in Hohenstein on the Swabian Alb Germany, we operate on 3,500 m² of production space with more than 45 employees, manufacturing in a low-CO₂ digital, and precise way. Where better to develop tomorrow's mobility than close to nature, independently, and with foresight? Behind our production halls, the Alb buffalo graze, while inside we focus on pioneering high-tech solutions.

HAILTEC makes precision scalable: micro-accurate components, economically produced from 1 to 1 million units. We combine inventiveness, speed, and a technology portfolio ranging from ultrashort pulse lasers and micro waterjet cutting to CNC and forming technology. Tactile, optical, or with focus variation – our in-house measurement laboratory verifies product quality with absolute precision.



HAILTEC

Your expert for precision mechanical prototypes and pre-series production

- + Laser fine cutting
- + Micro waterjet cutting
- + Ultrashort pulse laser processing
- + Precision forming technology
- + CNC precision manufacturing
- + 3D Metrology by Alicona

HAILTEC

HAILTEC AS PART OF THE CONSYDERA GROUP

Since 2024, we have been part of a strong alliance: with the European corporate group Consydera, we aim to become the European leader in Next-Gen Mobility. Together with our Italian sister company Ausafer, we form the Electric Division. For customers, this means synergies and security – from material procurement and machine park to sales. Working with HAILTEC provides scalable precision and a strong network at your back.

» From 14-meter sheets down to the micrometer range – together with our Italian partners, we cover the entire spectrum. «

Alexander Renz, CEO HAILTEC



CONSYDERA BY THE NUMBERS

- + 500 employees
- + 100.000 m² of production space
- + 35 laser cutting systems (6 of them at HAILTEC)
- + 100 machines
- + 50 technologies
- + 1,200 customers in 30 markets

WE TRANSFORM METAL TO TRANSFORM THE WORLD

