



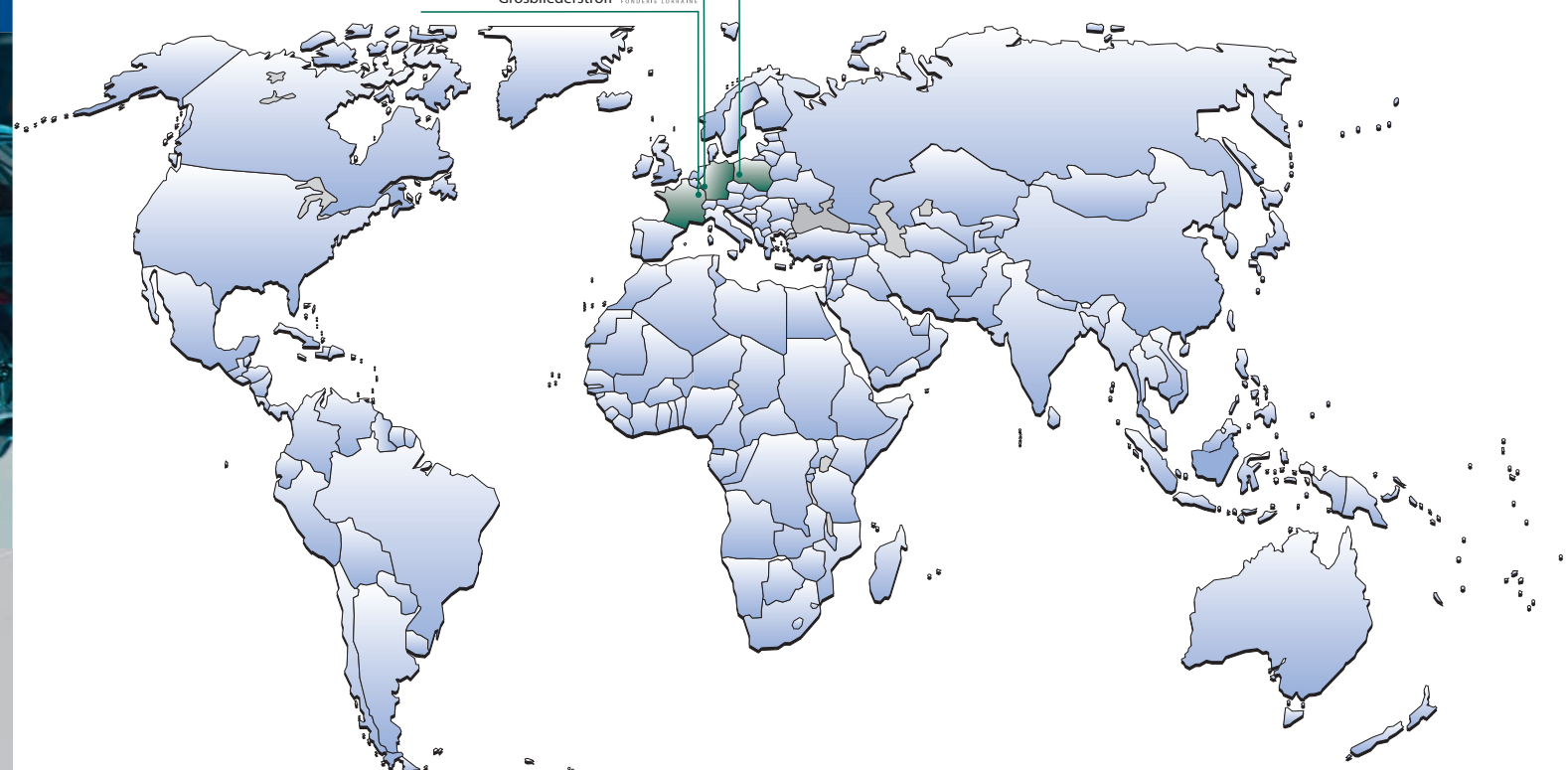
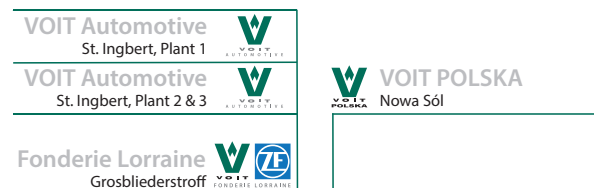
## E-MOBILITY VOIT ELECTRIFIES!

VOIT - your technology partner  
for product engineering, process  
development and large-scale series  
production for tomorrow's mobility



TECHNOLOGY INFO

E-Mobility



VOIT is a multinational system supplier for the automotive industry. The technology company manufactures for some of the world's largest automotive manufacturers and suppliers. VOIT technology is used in over 250 vehicle models and 45 brands. Nearly 65% of the world's leading automotive manufacturers put their trust in VOIT. Around 100 million VOIT parts and components are installed annually at BMW, Mercedes-Benz, Audi, Volkswagen, Jaguar Land Rover, Porsche, Stellantis, among others.

The company group employs almost 1,000 people at the head quarter in St. Ingbert and a total of approximately 1,800 at four locations throughout Europe. These include VOIT Automotive GmbH with three plants in St. Ingbert, VOIT Polska Sp. z o.o. and Fonderie Lorraine SAS, a joint venture with ZF Friedrichshafen AG under the technological leadership of VOIT Automotive GmbH.

VOIT develops and manufactures high-precision customer-specific aluminum die casting parts with finished functional surfaces as well as modules and components in forming technology. The core competence is to optimize our customer's complex product designs at an early stage and to produce them on a large scale in process reliability.

As a technology and development partner and as series supplier, VOIT has already electrified the product portfolio together with you. The basis for this are highly complex aluminum die-cast components as well as solutions in stamping and forming technology.

VOIT offers solutions from a single source: from product and process engineering to prototyping, toolmaking, large-scale production in our foundries and stamping plants, surface processing and coating, component assembly and functional testing, right through to just-in-time delivery of ready-to-install series parts.

The use of new manufacturing technologies opens up new design possibilities for cooled e-motors, battery systems and power electronics.



### The VOIT Group

#### Headquarters Germany

VOIT Automotive GmbH, plant 1  
VOIT Automotive GmbH, plant 2 & 3



#### Location in Poland

VOIT POLSKA Sp. z o.o., Nowa Sól



#### Location in France: Joint Venture VOIT / ZF Friedrichshafen AG

Fonderie Lorraine S.A.S, Grosbliederstroff



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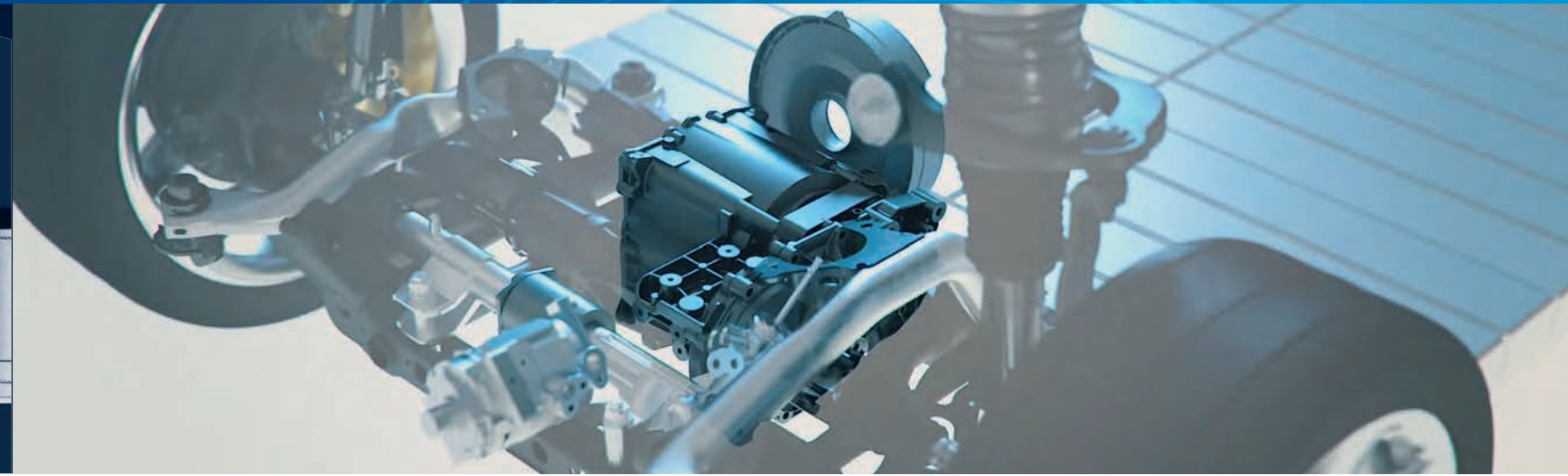
### References

Volkswagen, Audi, ZF Friedrichshafen, Bosch, Brose, BorgWarner, FCA, Continental, Vitesco, Ford, Valeo, Punch Powerglide, AMK, MAHLE, and many more.



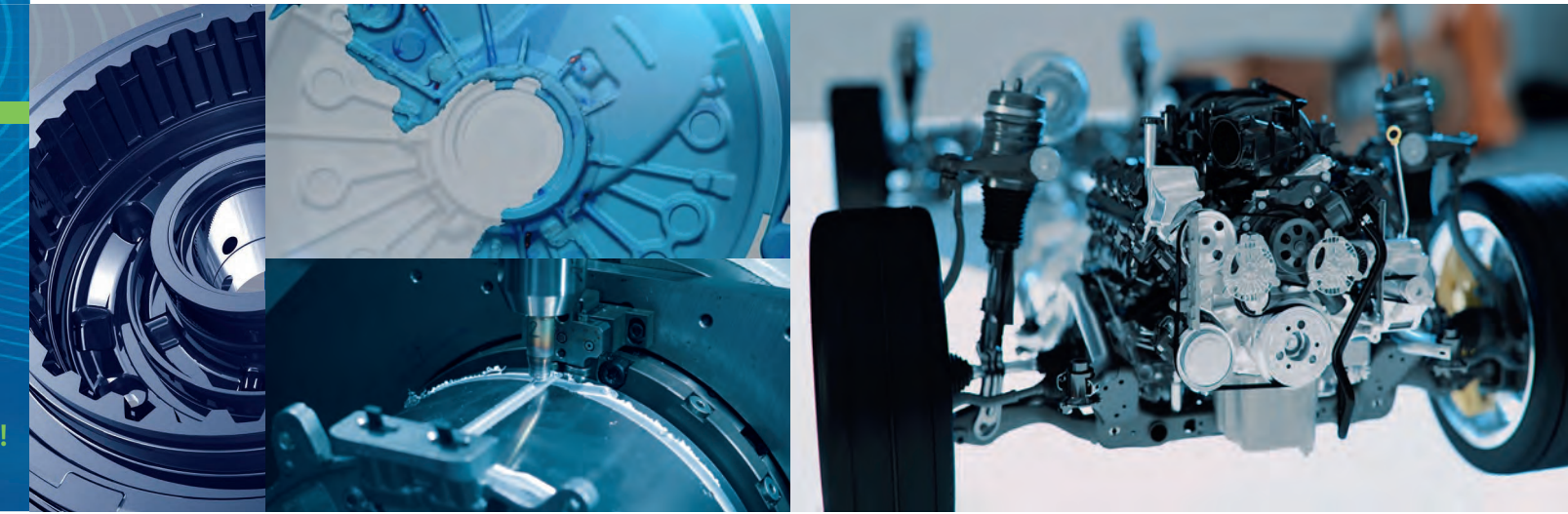
# Our process-know-how distinguishes us

Forming technology and aluminium die casting are our passion!



## VOIT electrifies

As a development partner for manufacturing processes and efficient series manufacturer, VOIT is in high demand as a technology partner. Together with you, we create the sustainable mobile worlds of tomorrow!



### Electrification: innovative technologies for a wide public

Autonomous driving, CO2 neutrality/ sustainability and digitalization are the automotive trends of the future.

From development and prototype production to large-scale production, VOIT is your competent partner.

We distinguish ourselves by our process expertise.

We master complexity and precision and continue to develop sustainably together with our customers. From complex components to ready-to-install assemblies, from early product engineering and prototyping to series production of ready-to-install components.

In our competence centers for forming technology, die casting, machining and tool making, our employees have extensive knowledge of materials and processes as well as a great love to the detail.

This wide-ranging expertise in various areas of the material and process chain as well as innovative production technologies make VOIT so unique.

State-of-the-art manufacturing technologies such as friction stir welding in series production open up new possibilities in the design of cooled electric motors, 48V battery housing structures and power electronics.

Our core competence lies in optimizing the complex product designs of our customers so that they can be mass-produced in a safe and economical process.

At a time when development and life cycles are becoming ever shorter, we accompany our customers as an engineering partner from the early development phase, including prototyping.

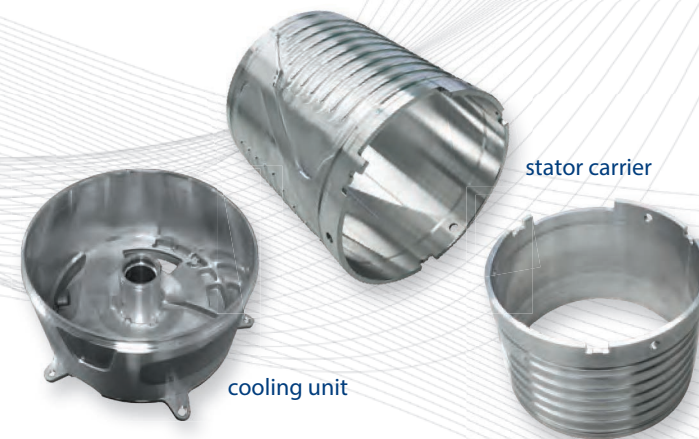
Our simultaneous engineering approach accelerates the start of production and thus your market entry. Thanks to optimal processes, even steep start-up curves in series production are guaranteed.

VOIT manufactures powertrain components for vehicles for hybrid and purely electric drives: from internal transmission components and intermediate plates to power electronics components and complete housing structures for e-axes and batteries. In the future of autonomous driving and electrification, the product areas of comfort & safety and driver assistance systems will play an increasingly important role. For these areas, we produce parts for brake systems, thermal management, and the chassis, among others.

Because we love cars and are leading the way. VOIT - emotion for mobile worlds.

### Process development and series delivery from a single source

- Process-independent manufacturing consulting -> die casting and/or forming technology
- Technical consulting for the process chain -> robust processes for large scale production
- Ready-to-install components including mechanical processing & surface conditioning
- Ready-to-install component groups -> in-house assembly capabilities
- Solution-oriented process development -> e.g. development of a friction stir welding process for die casting parts



### Application and technologies

#### Friction stir welded housing structures for your E-application

- Cooled battery systems
- Cooled motor housing
- Cooled housing structures for your Power electronics

#### Components for your thermal management

- Motor housing
- Compressor heads

#### Components for electrified gearboxes and axles

- Separating clutch
- Rotationally symmetric pot structures
- Disc carrier
- Planet carrier & ring gear carrier

#### Autonomous steering

- Housing for your electric steering

#### Autonomous braking

- Brake booster
- Brake assistance ABS/ESP
- Motor housing for ABS-/ESP-controller

#### Automated shifting in the powertrain

- Transmission components
- Components for electric machines
- Rotationally symmetric pot structures
- Planet carrier & ring gear carrier
- Axial piston
- Disc carrier

#### Chassis stabilization

- Components for suspension struts
- Compressors for air suspension
- Assembly of components

- = Metal working technology
- = Aluminium die casting
- = Combined material usage

### Quality first

Specialized and qualified employees from the fields of R&D, project management, manufacturing technology, logistics, quality management and business administration work daily to meet the demands of the entire value chain, right up to our customers.

VOIT is certified according to:  
 IATF 16949 (Automotive)  
 DIN EN ISO 9001 (QM system)  
 ISO 14001 (Environment)  
 DIN EN ISO 50001 (Energy)  
 DIN EN ISO 45001 (Health and Safety)

### All manufacturing technologies from a single source

#### Prototyping

#### Simultaneous Engineering

#### Development process

#### Cold forming: punching, drawing & roll-bending technology

Transfer and deep drawing presses up to 2,400t, material thicknesses < 8 mm, material grate 5500

#### Aluminium die casting

> 55 casting cells with a clamping force from 500t to 2,500t, special alloys, vacuum, weldable and helium-tight if required, fully automated production

lines, CNC machining centers (up to 5-axis machining), automated helium leak testing, surface finishing, assembly services, welding processes.

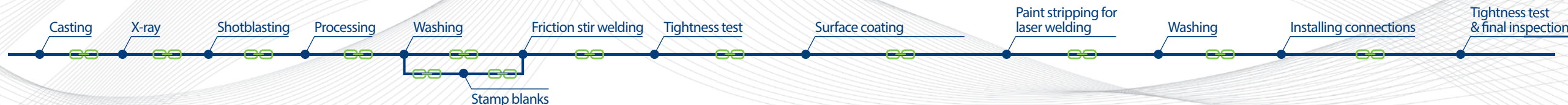
#### Surface Quality

Surface tension, anodizing, chromium(III) passivation, KTL.

#### Assembly work

Welding and fusion processes, friction stir welding in series

### Process flow of a water-cooled housing structure



Continuous inspection during series production + Traceability

### VOIT manufacturing portfolio for plug-in transmissions and electric axes

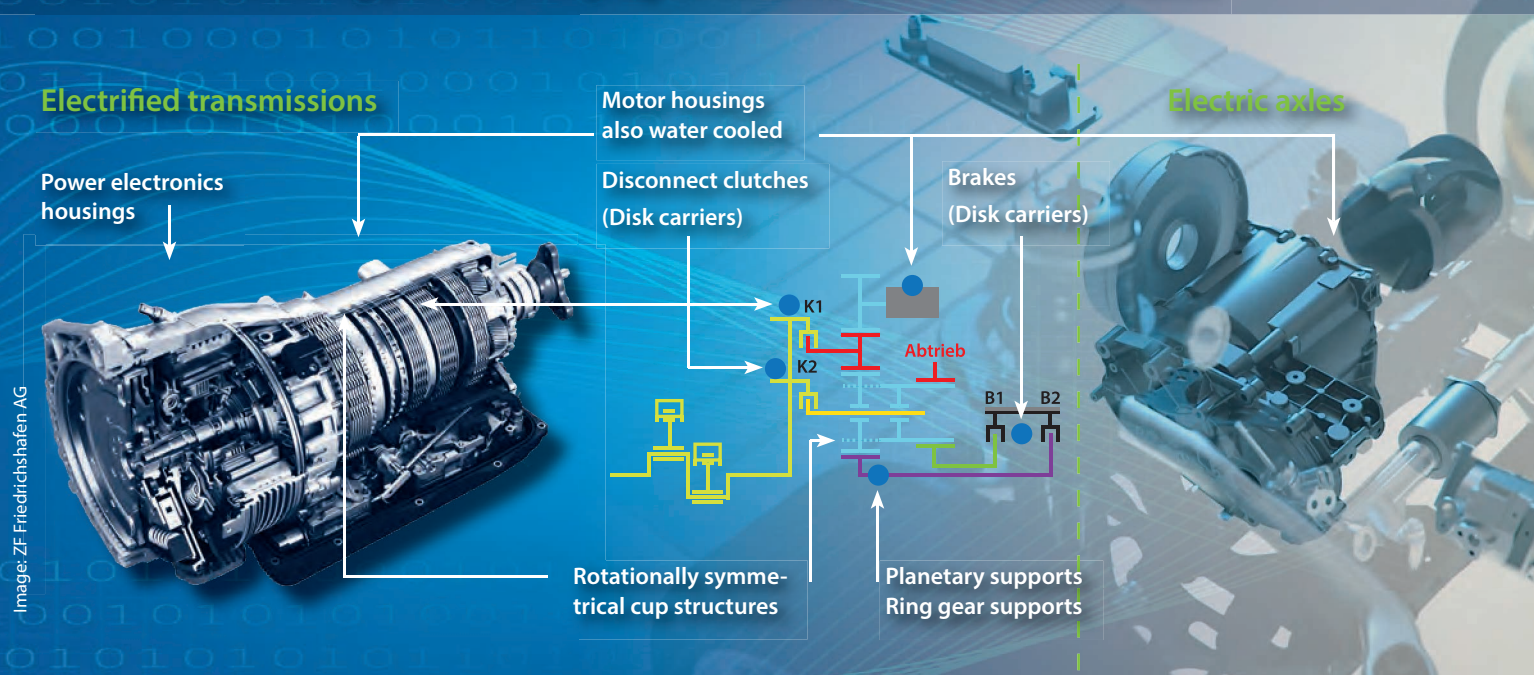


Image: ZF Friedrichshafen AG