

**Mobility.**  
**Materials.**  
**Photonics.**  
| united by passion.

**THE HÜBNER GROUP – PRESENTATION BUS DIVISION 2019**



# THE HÜBNER GROUP

TRADITION & INNOVATION SINCE 1946 – STRENGTH THROUGH DIVERSIFICATION



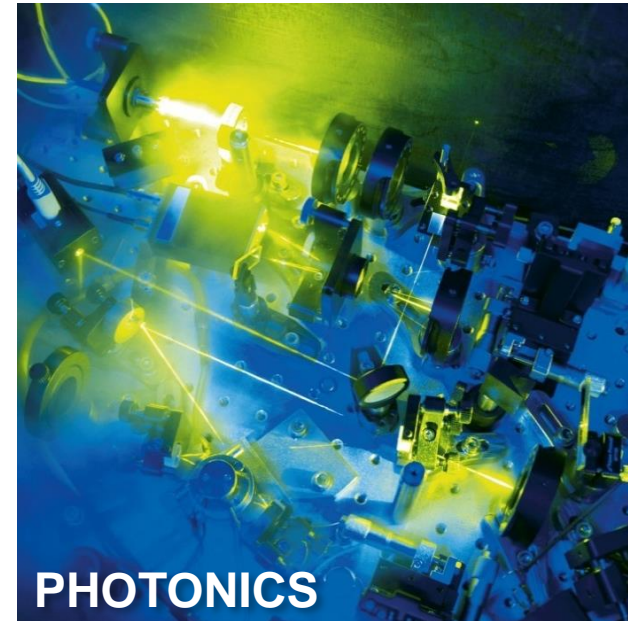
## Worldwide leader in gangway systems

- Systems for railway vehicles and buses
- Airport technology products
- Chassis technology for buses, commercial vehicles and railway vehicles
- Engineering services



## Specialist for sophisticated solutions featuring

- Rubber
- Polyurethane and plastics
- Elastomer-coated fabrics



## Products for a wide range of photonic applications

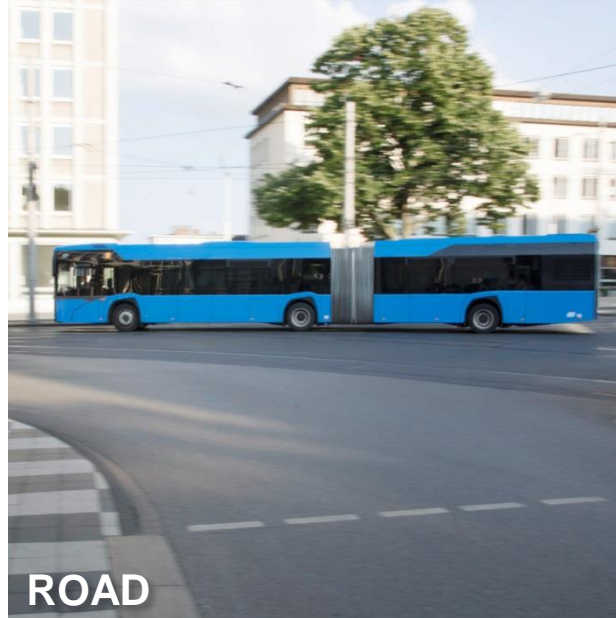
- High-performance lasers
- Terahertz technology
- High frequency technology

# MOBILITY: PART OF THE MEGATREND

HÜBNER - SUPPLYING INNOVATIVE PRODUCTS FOR THE TRANSPORT SECTOR FOR OVER 70 YEARS



- Gangway systems
- Articulation systems
- Quick-change window systems
- Rubber systems
- Tram exteriors (front bumpers)
- Entrance systems
- Chassis technology
- Display and driver-assistance systems



- Complete gangway systems with integrated articulation
- Entrance systems (ramps & lifts)
- Rubber systems
- Interiors & exteriors (fire retardant)
- Protection & sealings
- Chassis technology for buses and commercial vehicles



- Passenger Boarding Bridge Interfaces
- Folding canopies
- Kinematic systems & drive assemblies
- Fire-resistant materials

# MATERIAL SOLUTIONS: THE SPECIALIST

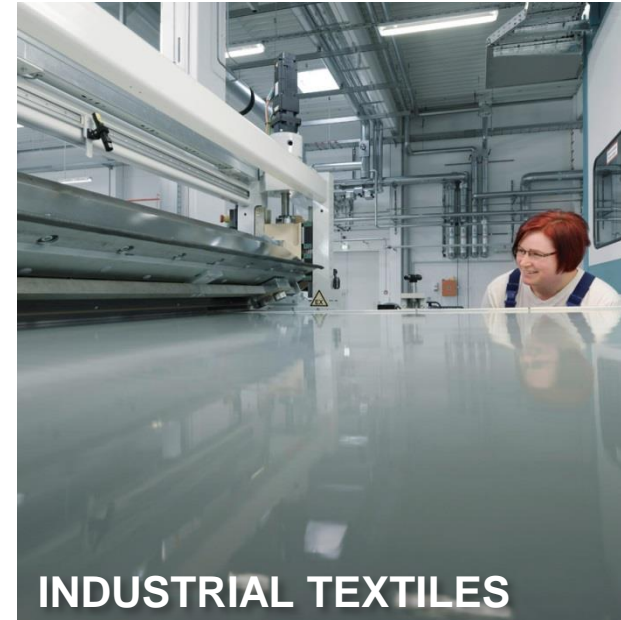
PROCESSING APPLICATIONS AND MATERIAL COMBINATIONS FOR THE MOST DEMANDING REQUIREMENTS



- Bus & rail: Door seals with sensor systems
- Aerospace: Silicone seals
- Oil & Gas: Fabric-reinforced inflatable seals
- Fire testing
- Over 600 recipes for rubber and silicone compounds
- Black or multi-colored



- Housings & control panels
- Interior components
- Multi-component parts
- Polyurethane collision protection elements for trams ( fire protection according to DIN EN45545 R17 HL2/HL3)
- Insulating materials
- FRP



- Development and production of elastomer-coated fabrics
- Wide range of coating and vulcanization processes
- Solid rubber / liquid elastomers
- Design of surfaces according to customer requirements
- Dynamically resilient, flame retardant, heat and cold resistant

# PHOTONICS: TOOLS FOR SCIENCE AND INDUSTRY

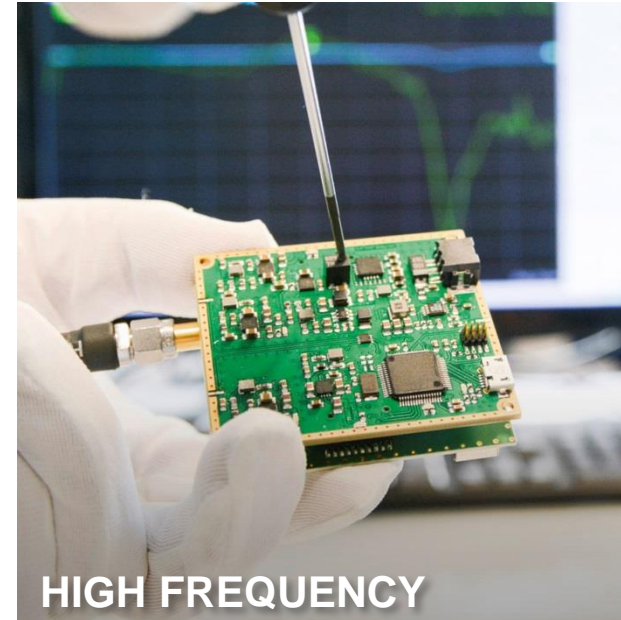
## SUPPORTING THE LATEST TECHNOLOGIES AND PROCESSES



- Compact single-frequency CW lasers, diode lasers and Q-switched lasers in the complete UV-Visible-NIR spectrum
- C-WAVE tunable lasers
- C-FLEX laser combiners



- Detection, analysis and hyperspectral imaging of materials using terahertz technology
- T-SENSE - THz imager for secure postal inspections
- T-COGNITION - Identification of hazardous substances
- T-SPECTRALIZER - All-round spectrometer



- On the basis of customer wishes, HÜBNER develops and manufactures high-precision components and systems – from oscillators, amplifiers or filters to complete transmitting and receiving systems

- 2019** Strengthening of the Material Solutions business segment with acquisition of the GWU Group (rubber/insulating materials/FRP)
- 2019** Moving from the railcar into the locomotive cockpit: Acquisition of the railway electronics provider GERSYS (driver displays)
- 2018** New certification for PUR products with paint finishing in accordance with fire safety standard DIN EN45545R17 HL2/HL3
- 2016** Establishment of the Photonics Division (lasers, terahertz and high frequency technology)
- 2015** Acquisition of the Swedish laser manufacturer Cobolt AB
- 2007** IRIS certification
- 2004** Start of production of ramps and lifts in particular for buses
- 2000** Start of the production of window systems for buses and trains
- 1992** Conclusion of the development of vehicle articulation systems
- 1985** Development of high-speed gangways (ICE)
- 1979** Commencement of the internationalization process: New production location in Brazil
- 1979** Development of the first corrugated bellows
- 1968** Start of polyurethane production
- 1956** Development of aerodynamic, sound-insulated gangways for the Trans Europe Express (TEE)
- 1952** Production of the first folding bellows for articulated buses
- 1952** Entry into railway business: Production of rubber tubing connections as gangways for railway passenger cars
- 1946** Company founding and production of first rubber vulcanization products

## MILESTONES OF COMPANY HISTORY

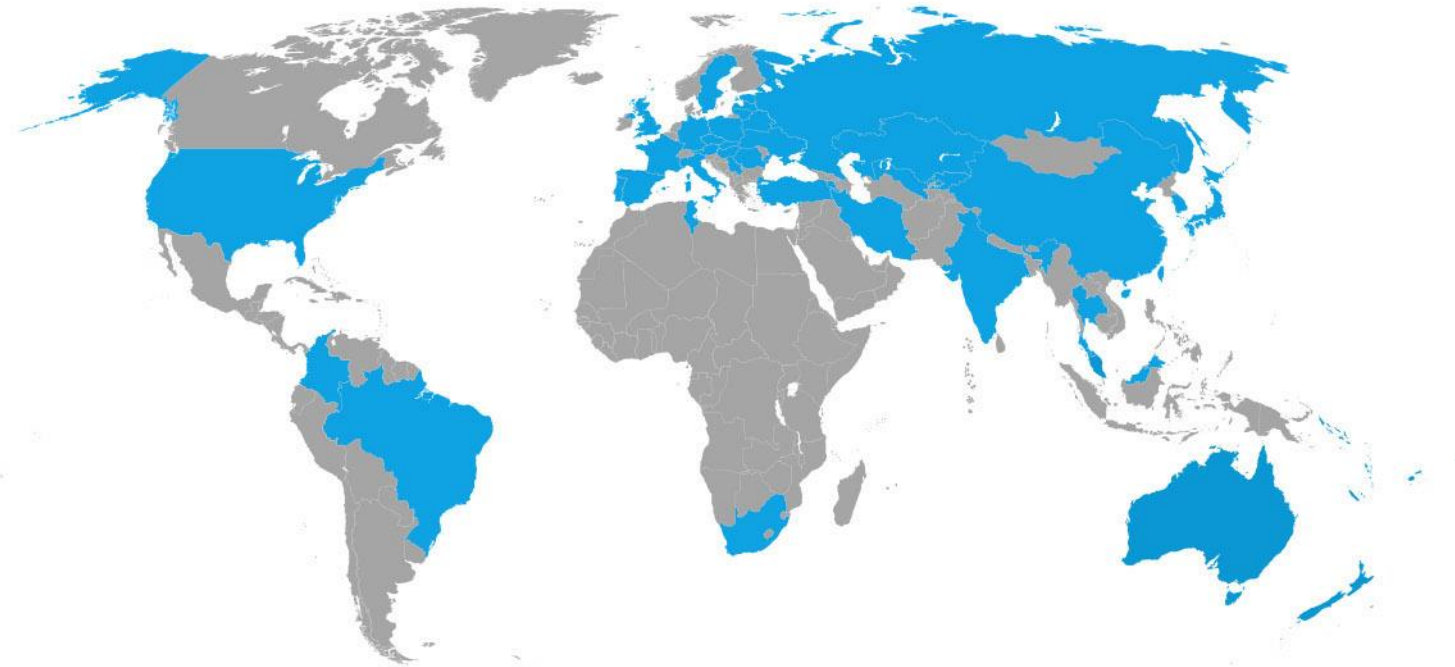
YESTERDAY AN IDEA, TODAY THE STANDARD

# HÜBNER AT A GLANCE

FACTS AND FIGURES – A FAMILY OWNED COMPANY SINCE 1946.

Think globally, act locally.  
HÜBNER is there where its customers are.

- 1979 Brazil
- 1995 USA
- 1997 Hungary
- 2002 China
- 2003 Russia & Sweden
- 2004 France & Italy
- 2011 India & UK
- 2012 South Africa
- 2013 Malaysia
- 2016 Turkey
- 2019 Poland



**1 group**  
with more than  
**25 Locations**

sales partners & representatives  
in more than **30 countries**

founded in  
**1946**

approx. **1,000**  
patents worldwide

group revenue more than  
**€ 350 million** (2018)

approx. **3,300** employees



# THE HÜBNER GROUP: WIDE-RANGING EXPERTISE ALL UNDER ONE ROOF

SOMETIMES ANOTHER BRAND ON THE OUTSIDE, ALWAYS HÜBNER QUALITY ON THE INSIDE







# Mobility | Making mobility happen.

# PRODUCTS FOR RAILWAY VEHICLES

## MAKING CONNECTIONS



- The worldwide leader for gangway systems for trams, metros, subways and suburban railways as well mainline trains and high-speed trains.
- Articulation systems
- Quick-change window systems
- Molded rubber parts
- Front bumpers for trams
- Ramps
- Chassis technology (Group company Hemscheidt)
- Display and engineer-assistant systems (GERSYS)

# PRODUCTS FOR BUSES

## WE BUILD 1.60 METERS OF THE BUS



We supply complete, ready-to-install connection systems for all types of articulated and bi-articulated buses in low-floor and high-floor models. These systems include the articulation system, the folding bellows, power connection components, electronic articulation control and components for the bus interior.

- Complete gangway systems including articulation system
- Ramps & lifts
- Rubber systems
- Interiors and exteriors (fire retardant)
- Protection & seals



# AIRPORT TECHNOLOGY PRODUCTS

## BOARDING COMPLETED

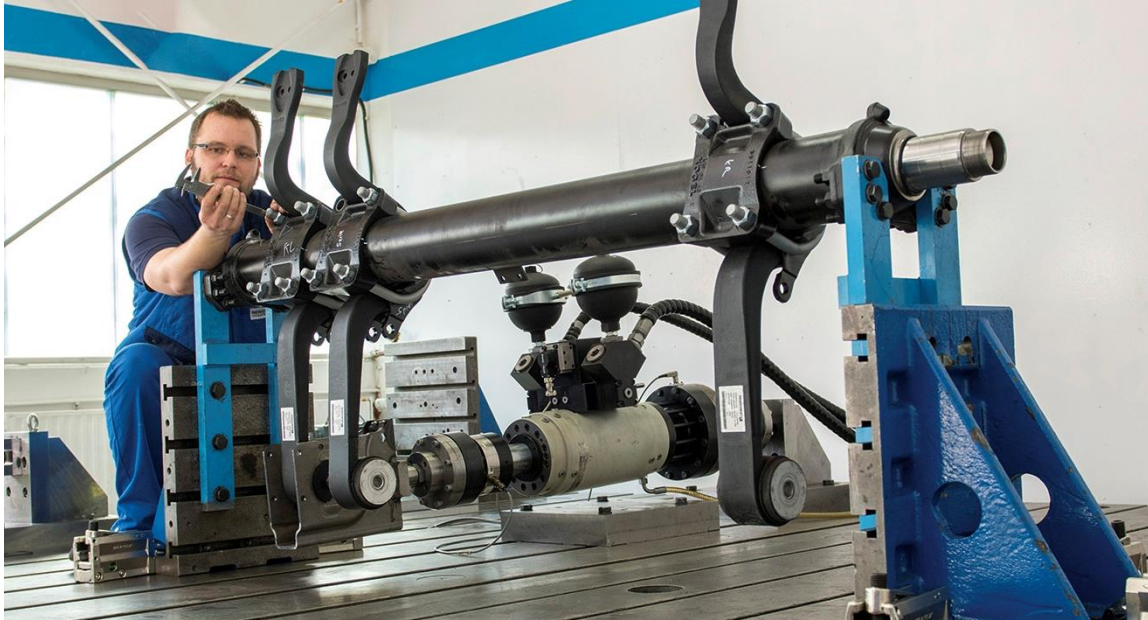


Many leisure and business trips get started with HÜBNER. Connection systems produced by the company make it possible for passengers to enter planes safely and comfortably via the passenger boarding bridge – at airports around the world.

- Passenger Boarding Bridge Interface
- Folding canopies for passenger boarding bridges
- Kinematic systems & drive systems
- Fire-resistant materials
- Individual design

# TRUCK & TRAILER

FOR ALL THE REQUIREMENTS OF A COMMERCIAL VEHICLE



As part of the HÜBNER Group, the HEMSCHEIDT Fahrwerktechnik GmbH & Co. KG develops and produces high-performance components especially designed for the demands of commercial vehicles:

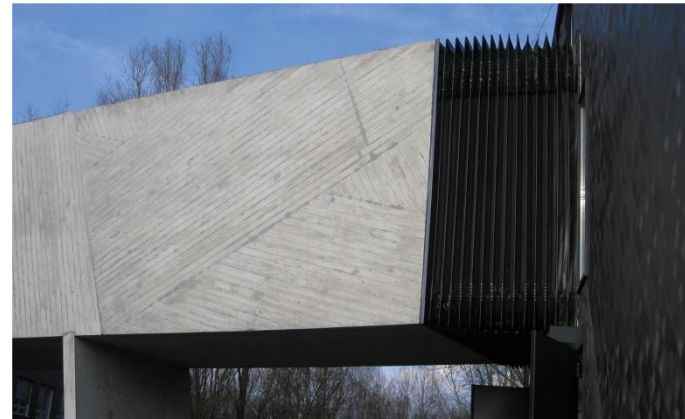
- Trailer suspension systems for 9-ton axles
- Hydropneumatic suspension systems with load-adjusting damping
- Axle guides in many different forms

The newest addition to the HÜBNER product range in the Truck & Trailer segment now includes:

- High-safety control units for commercial vehicles that prevent malfunctions of the electrical components (ISO 26262)

# FLEXIBLE CONNECTIONS

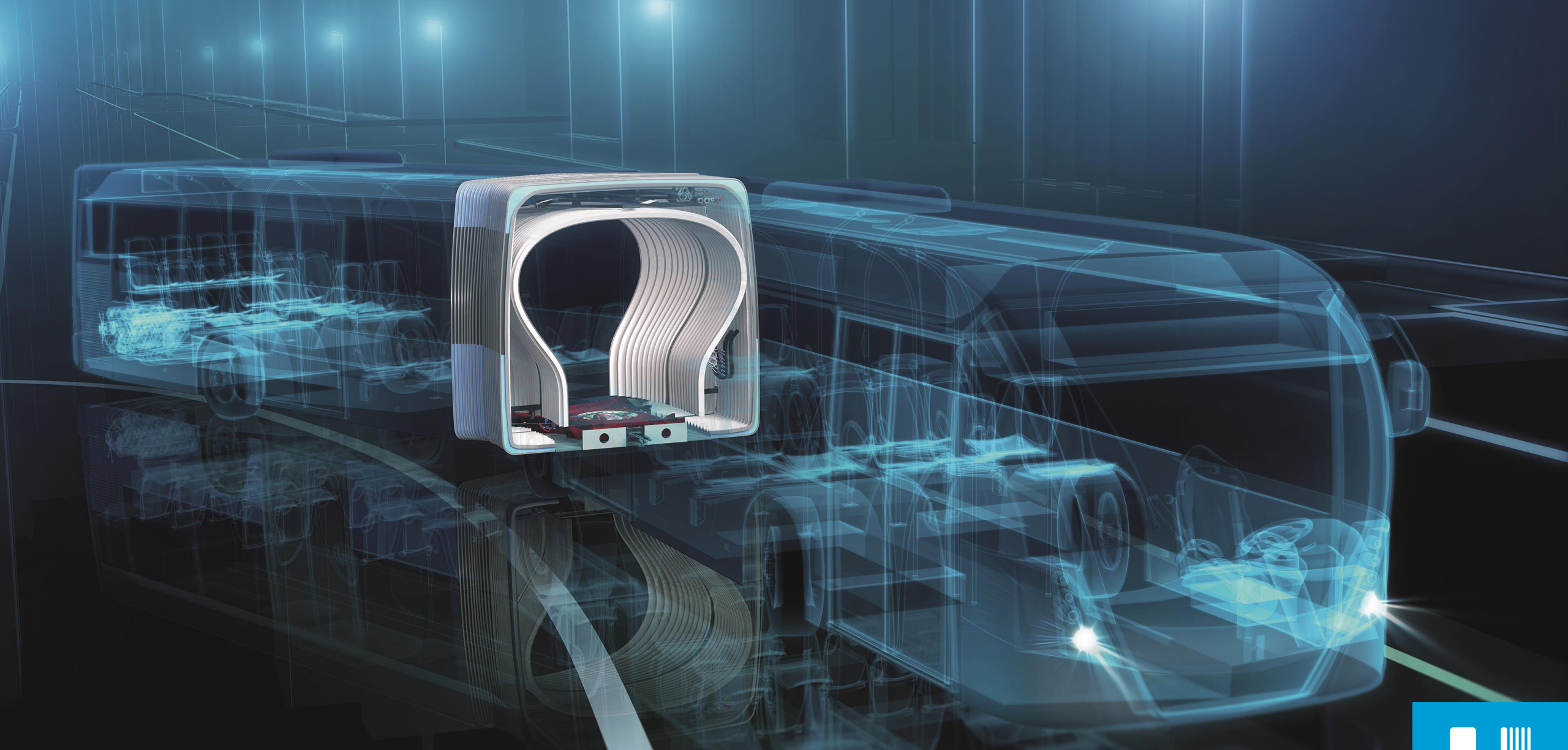
## ENGINEERING KNOW-HOW FOR EVERY OCCASION



Whenever customers require a component or a material with highly specific characteristics and capabilities, such as extra flexibility, extreme noise protection or high flame resistance, HÜBNER is there to develop the needed solution.

- Design bellows for world-class architecture
- Extra heavy-duty connections for maritime and commercial vehicle applications
- Bellows for sound insulation for heavy construction pile drivers

And HÜBNER does not only put these key resources to work in completing special projects. Each and every gangway system for railway vehicles, buses or the airport sector is always a custom solution, individually produced and modified to fulfill the customer's wishes.



# PRODUCTS AND CONCEPTS FOR BUSES



- 
- 2018** Consulting and concept development for High Capacity Buses
  - 2017** First design of a detachable articulation system is presented to the public
  - 2015** First halogen-free folding bellows
  - 2013** Launch of the new articulation system family HNGK 19.5
  - 2011** First articulation prototype for multi-articulation vehicles
  - 2007** First motified folding bellows presented at the world's most important exhibition for contemporary art: the documenta
  - 2004** Production of ramps and lift systems
  - 2001** Introduction of the first redundant articulation damping system in the world
  - 1995** First series production delivery of low-floor articulations
  - 1986** First translucent folding bellows in the world
  - 1952** Production of the first folding bellows for articulated buses
  - 1946** Company founding and production of first rubber vulcanization products

**YESTERDAY AN IDEA, TODAY THE STANDARD**  
HÜBNER AND THE BUS INDUSTRY.



# PLUG-AND-PLAY SYSTEMS FOR ARTICULATED BUSES

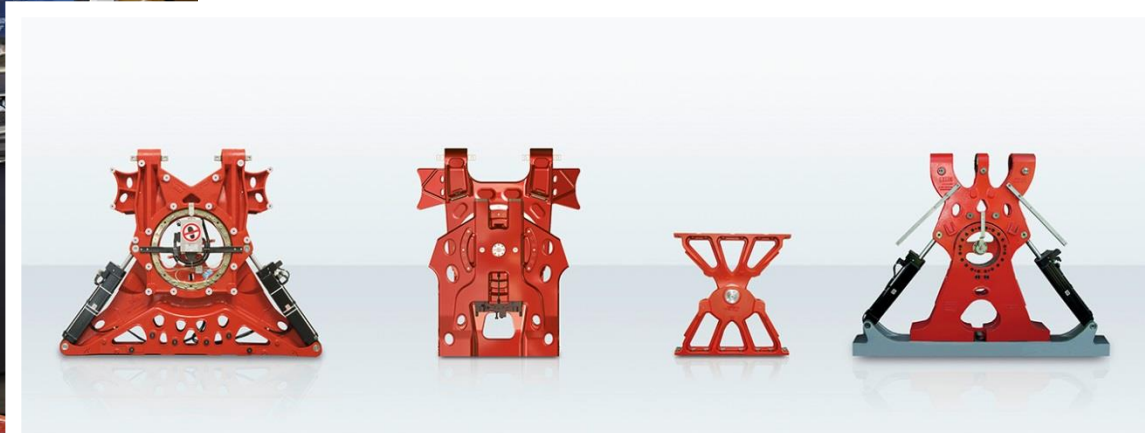
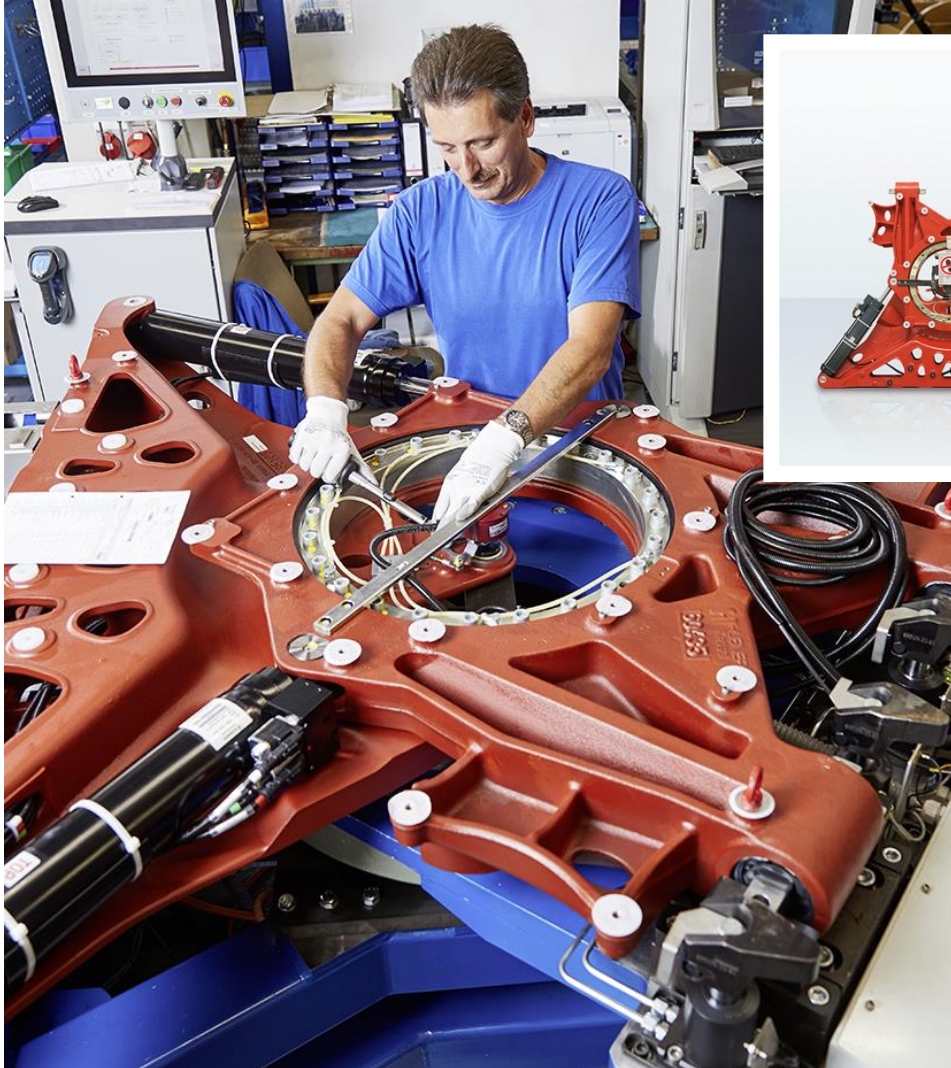
## COMPONENTS OF THE COMPLETE SYSTEM



- **Articulation systems**  
Suitable for all types of vehicles
- **Damping systems**  
Driving with maximum safety & comfort
- **Energy guidance systems**  
Safe and flexible bridging in the floor, side and roof areas
- **Folding bellows**  
Can be customized in terms of color, shape and design
- **Floor and roof coverings**  
Heat and sound insulation for greater comfort

# ARTICULATION TECHNOLOGY FOR EVERY SITUATION

## PRODUCT PORTFOLIO MEETING THE LATEST TECHNICAL REQUIREMENTS



### Articulation systems for:

- Low-floor buses
- High-floor buses
- Special applications

# DRIVING SAFETY & COMFORT

DAMPING SYSTEMS FOR ALL DRIVE CONCEPTS AND OPERATING CONDITIONS

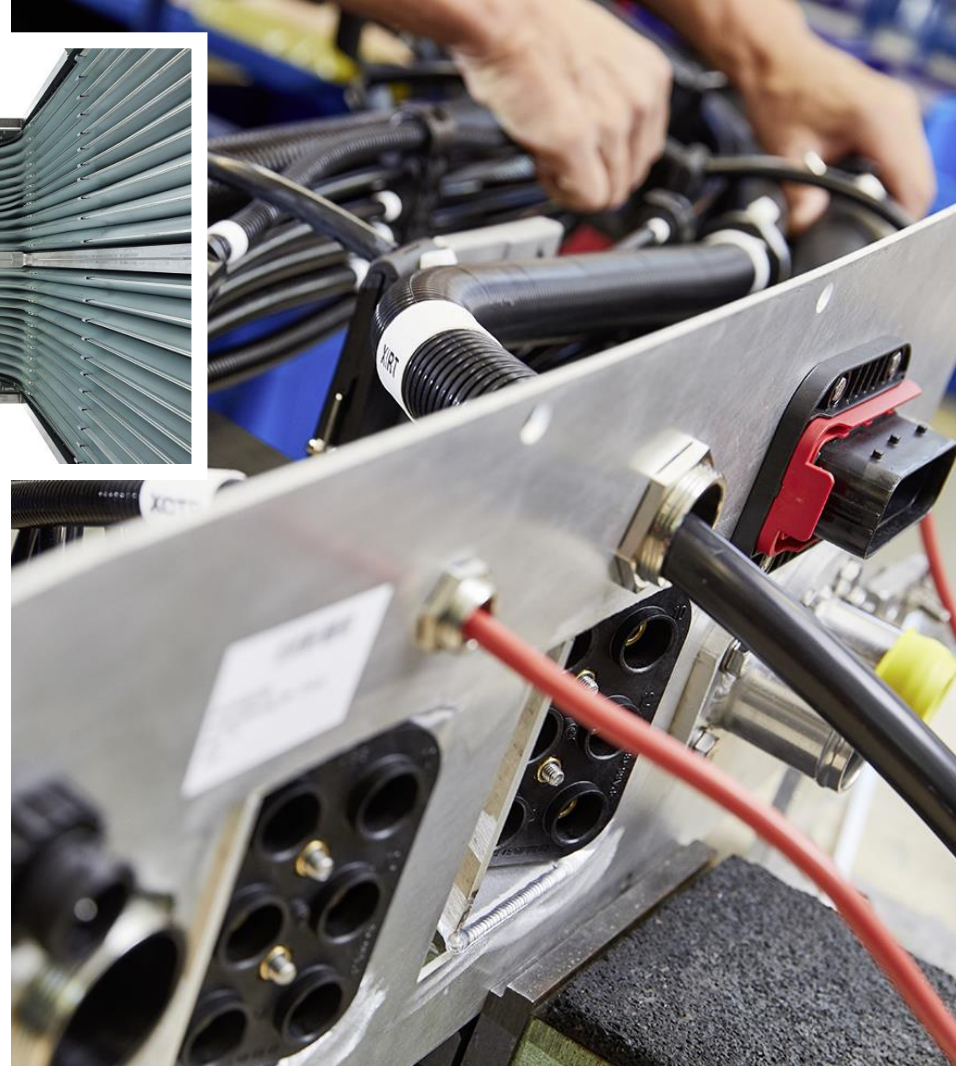
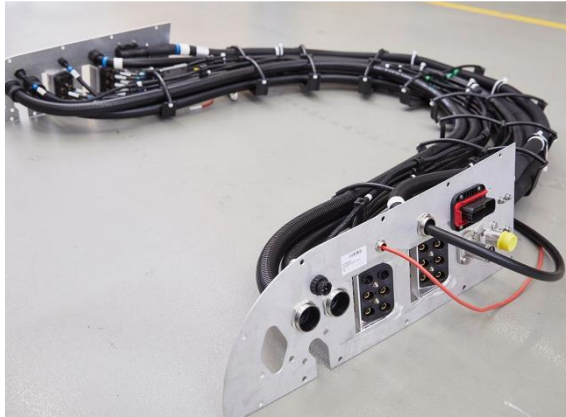


ARTICULATION CONTROL UNIT (ACU): INTEGRATED SAFETY

- Mechanical damping systems
- Electronically controlled models with full diagnostic capabilities
- Maintenance-free functionality
- Computer-controlled articulation systems
- Individual adaptation

# ENERGY GUIDANCE SYSTEMS

OPTIMIZED, CUSTOMER-SPECIFIC INTEGRATION INTO THE VEHICLE STRUCTURE



- In the side area or in the roof area
- For hybrid, CNG and trolley buses
- For special requirements of fully electric buses

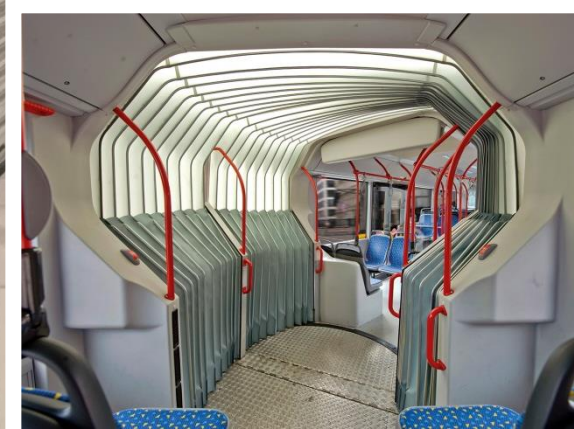


Flightforum  
Lin Bestemming  
HUBNER Airport  
Aankomst



# FOLDING BELLOWS

MADE WITH SPECIALLY COATED FABRICS FOR INDIVIDUAL, CUSTOMIZED SOLUTIONS



Customized folding bellows: consistently implemented CD

- Standard bellows
- Colored bellows
- Translucent bellows
- Individual design motifs
- UV stability
- Resistant to heat and cold
- Excellent tear and wear resistance
- Halogen-free materials

# FOLDING BELLOWS

HALOGEN-FREE, FIRE-RESISTANT MATERIALS OF THE HIGHEST QUALITY



- Identification of essential characteristics of chemical substances (REACH)
- Compliance with international regulations designed to prevent banned materials
- Compliance with fire safety standards

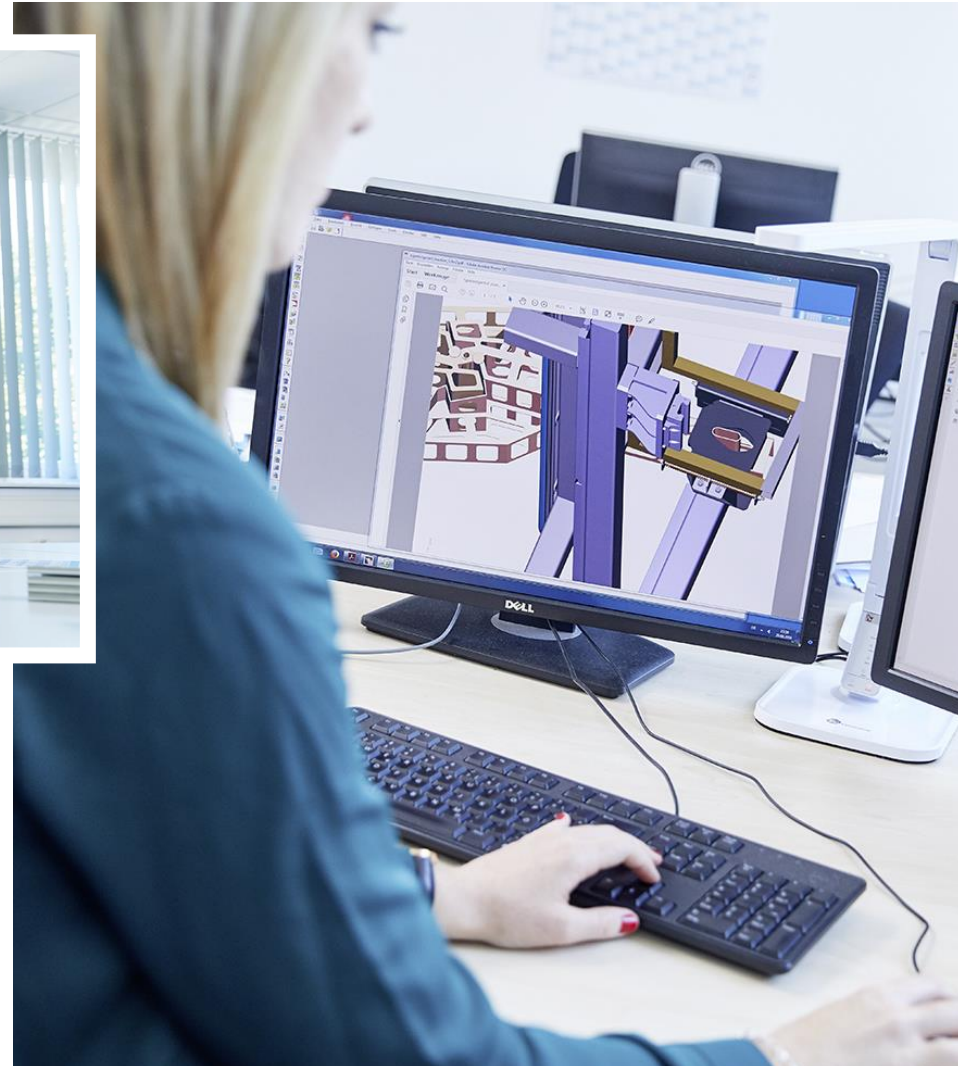
# CONSULTING SERVICES

## FEM CALCULATIONS AND DURABILITY TESTING FOR OPTIMIZED INTEGRATION



### Consultation and planning from the initial idea to test-ready prototypes

- FEM calculations & durability testing
- Test drives for stress analysis
- Vehicle concepts and integration of key components for High Capacity Buses





# RAMPS & LIFTS

ENTRANCE SYSTEMS FOR BUSES MADE BY HÜBNER TRANSPORTATION GMBH



- Expanded options for disabled persons
- Meeting the highest safety and quality standards
- Tailor-made solutions, for almost every type of vehicle
- Perfect matching and integration for existing vehicle designs

 **HÜBNER**  
TRANSPORTATION GmbH



# PROTECTION & SEALING

## RUBBER AND SILICONE PRODUCTS



HÜBNER's rubber and silicone products protect, damp, seal and insulate – from delicate precision parts to several kilograms of heavy sealing.

- Rubber and silicone molded parts, seals
- Rubber-metal compounds
- Rubber profiles and frames

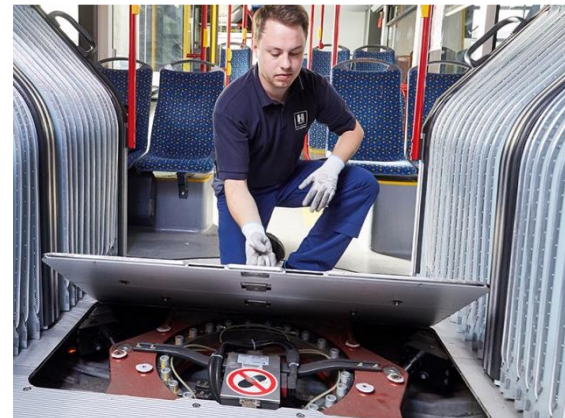


# SERVICE

FOR YOUR ARTICULATION SYSTEMS, FOLDING BELLOWS AND RAMPS

**HÜBNER not only provides first class products – we also guarantee the ongoing operational performance of your fleet, increase your vehicle availability and support you with bus fleet service and maintenance as required.**

- On-site consulting and vehicle appraisals
- Reduction of downtimes
- Individual training
- Spare parts support and sales
- On-site maintenance and repair services
- Improvement of your vehicle availability



# REFERENCES

## HÜBNER PRODUCTS IN USE AROUND THE WORLD



# THE HÜBNER GROUP

FROM RUBBER PRODUCTION TO LASER TECHNOLOGY



HÜBNER products stand for:

**SAFETY | HIGH QUALITY | CONVENIENCE | LONG LIFE**

HÜBNER is certified: DIN EN ISO 9001:2015, DIN 6701-2, DIN EN 15085-2, DIN EN ISO 14001:2015, DIN EN ISO 3834-2, DIN EN ISO 50001:2011, ISO/TS 22163

## What can we do for you?