

www.schaltbau-bode.com



Bode. Die Tür.
Door systems for cars.





This much. is certain.

Industrial production – Made in Germany

- excellent quality due to advanced production
- cost efficient lean-production
- high degree of automation

Standardised components & systems

- entrance systems – electric, pneumatic & mechanical
- extensively validated components and systems
- comprehensive documentation, approvals and certifications

In-house software development & support

- HARDI & MTB3 diagnostics & control management systems
- BMUplus, the Bode Boarding Management Unit
- high degree of system compatibility thanks to in-house development

Efficient & long-term cooperation

- designated partners in many countries
- customer and result orientated
- high level of know-how due to low employee fluctuation

Life-cycle costs

- market-driven prices for a product life – thanks to high quality, long & reliable useful life and effective service
- compliant and flexible to your requirements

Knowledge at the interface with the passenger

- exchange with user groups and associations
- research & development collaboration with institutions and universities



Less weight, more stability, compact design

- use of aluminium & composites with simultaneous increase in stability and useful life
- "Plug & Play" – small installation spaces and short installation times

Trend-setting development

- e-mobility pioneer
- development expertise for the highest requirements
- intelligent sensors and networked systems

Schaltbau Group – taking the vehicle to the next level

- cross-system products and intelligent sensors
- long-term availability of systems and services
- leader of new technologies and initiator of trends

Fast response and uncompromising commitment

- worldwide services
- direct contact and availability
- fast-response problem solving

Easy maintenance

- service-friendly design
- intelligent diagnostics
- multi-lingual technical documentation

Smooth logistics

- just-in-time – assembled to your specifications
- reusable transport racks
- long-term reliable and fast spare parts logistics



We are. intelligent. Engineering.

Industrial precision

Dimensional accuracy and reliable function during their entire life are elementary components of our door systems. We achieve these quality levels by consistently investing in our production. In our Kassel location we produce solely to lean criteria – partly standardised, partly fully automated, but always high precision. In this way we ensure that our products do precisely what is expected of them, even under long-term sustained loads.

Customer-focussed strengths

When developing door systems we are never satisfied with anything less than the best solution. Bode has numerous patents in kinematics, electrical drives and networked systems. We dedicate the same technical expertise on which these developments are based to each further project too. Uncompromising reliability throughout the entire product life cycle is the result of Bode's comprehensive design and testing process. For each of our products we verify the safety of the concept (FMEA) in hardware and software on the basis of legal regulations and individual standards.

Exclusive software solutions

Software must work. It does it best if the development is precisely matched to the installed components and the mechanical requirements in the door system. This is the task of Bode's software development department. Working in close consultation with all functional departments, we develop individual software applications, which are used exclusively for each system.

Fulfilled user needs

The door is the interface with the passenger. For us it is obligatory that we bear in mind the needs of these stakeholders at all times. Safety and comfort always come first. In our projects we always have an eye on trends and wishes, as well as future measurement technology and sensors and we incorporate our cross-industry know-how from the rail, bus and automotive sectors into our realisation of the optimum solution.



We are. cooperative. Partnership.

Efficient collaboration

For us results-orientated working means completing projects quickly and cleanly in consultation with our customers. We bring together all the requirements for achieving this in our project management. We assign fixed contacts to each customer, who are then responsible for providing support, ensuring all workflows run smoothly and speak the same language as the customers – technically, interpersonally, but also in the true sense of the word: We develop fast and adapted solutions in many languages, experienced and confident on the national and international stage.

Flexible organisation

In collaboration with our customers we strive to achieve a long-term partnership. To this end above all we pledge to achieve maximum on-time delivery, constant quality and binding cost structures. One of our other strengths is to respond flexibly and pragmatically to wishes and changes during the project. This is made possible by many years of experience, short decision-making channels and a performance-orientated corporate culture.

Transparent costs structure

Our customers value Bode products due to their high, above-average reliability in use. Our brand stands for these strengths since many years. From the initial development to the worldwide sourcing of materials through to series production – our objective is to achieve the highest possible quality. Our goal is always: maximum reliability for minimum life-cycle costs.

Mutual exchange

Regular meetings with representatives of passenger associations and other institutions give us insight, not only into current developments. This mutual exchange promotes understanding and helps us to safeguard and to take into account the interests of passengers and associations from the early product planning stage. Keeping this in mind from the outset gives us and our customers the certainty that ultimately nothing has been forgotten.



We are. inspirational. Innovation.

Innovative partnership

When it comes to developing new systems and solutions, we like to be on board from the outset. For 50 years, Bode has been an innovation driver in the industry. We hold numerous patents which substantiate our high degree of technical excellence. If necessary our customers can rely on these resources exclusively for the development of new systems for doors, sliding steps and software. Together with the Schaltbau Group and the cross-industry collaboration of our areas of business, we continuously raise our innovation potential to a new level. This makes us the first choice for many for new product development – as a reliable partner from the design through to the finished solution.

Forward-looking development

eMobility, electric drives and networked systems, whether online or offline, are the topics to which the future belongs. We are already working intensively on the most important aspects, which in a few years will have a decisive influence on the transport of people and goods. The world is becoming “smart”. Previously unimagined opportunities are opening up for innovative product solutions. However, these are raising new challenges regarding security and data protection, which must also be solved. Research and development – cross-industry and with an ear to the market – is our approach to dealing with these issues, and at the same time to engage in close knowledge transfer with our customers.

Reduced weight

Lightweight construction is a central innovation driver for us in many areas of development. We continuously find new possibilities for reducing the weight of our door systems through intelligent and innovative use and combination of materials. Lightweight construction expertise is a notion with which we identify ourselves.

Integrated synergies

As part of the Schaltbau Group we actively transfer knowledge within the Group. Through our close cooperation we understand rolling stock and transport integrally, throughout the vehicle. This know-how enables us to use the available synergies intelligently to reliably include all requirements of a development and to continuously contribute new thought-provoking ideas for new developments and further development of existing systems in the partnership between us and our customers.



We are. prepared. Service.

Quick-response service

Our service team supports you throughout the entire life cycle of our systems – from the initial installation in new vehicles through to the overhaul of entire vehicle fleets. We offer training programmes, through which your personnel can ensure economical operation of Bode door systems for a long time. You can reach our team at any time and it can join you to provide on-site support worldwide within a short time. Direct help in all matters is a decisive criterion for us to achieve optimum partnership and reliability.

Problem-free maintenance

Maintenance and service times should be reduced to a minimum. For this time we pay attention to service-friendly planning and easy accessibility during the design stage, and provide computer-aided maintenance options with our HARDI diagnostics tool. We provide our customers with the technical documentation necessary for maintenance and service with each order, on request this can also be supplied in the respective language of the country of use.

Smooth logistics

Efficiency is created whether processes mesh seamlessly. In consultation with our customers, we purposefully ensure that our services are as smooth as possible. Under the aspect of service we also pay particular attention to logistics. Above all, this means cost-effective and secure transport of the goods to their intended destination. Together we clarify the requirements and implement them with a high degree of on-time delivery – not only for door systems but also for secured and quick-response supply of spare parts.

LT800-E | LT1250-E | SST-M.

Sliding doors for van bodies.



LT800-E | LT1250-E

Electric linear sliding door

Tried and tested many times over, easy to integrate and retrofit, electrical or mechanical linear guided sliding door for your van body.

Clear width:	800 mm / 1,250 mm
Drive:	E-drive optional
Locking unit:	Electromechanical rotary latches Locking unit with own control unit (can be integrated in the central locking unit)
Door handle:	with electronic button
Total weight:	electric approx. 65 kg mechanical approx. 40 kg
Seal:	Labyrinth seal / brush seal
Diagnostics:	Error diagnostics via our own HARDI software
Door movement time:	High opening and closing speeds

SST-M

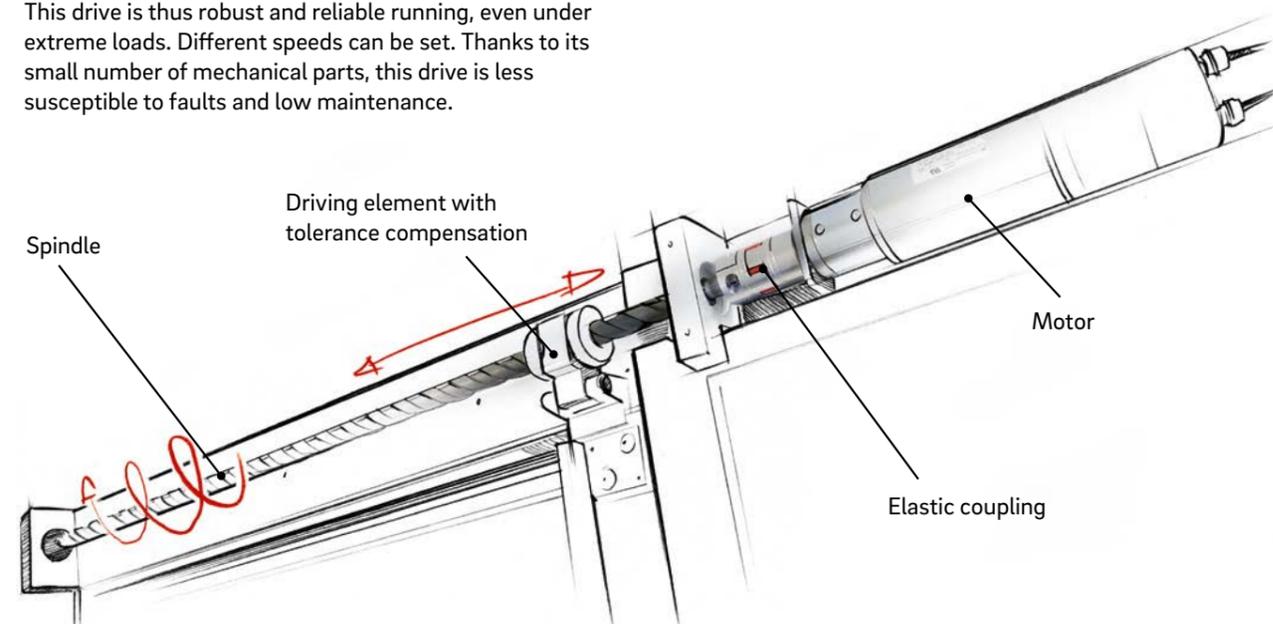
Sliding plug door, manually actuated

Door system flush with the body for additional leaktightness requirements in your van body.

Clear width:	800 mm
Locking unit:	Electromechanical rotary latches Locking unit with own control unit (can be integrated in the central locking unit)
Door handle:	with electronic button
Total weight:	mechanical approx. 40 kg
Seal:	all-round sealing system

Drive

The linear spindle drive is characterised by its minimum installed dimensions and few mechanical elements. This drive is thus robust and reliable running, even under extreme loads. Different speeds can be set. Thanks to its small number of mechanical parts, this drive is less susceptible to faults and low maintenance.



Locking unit

The two-stage rotary latch lock unit with electrically driven release and sensor-controlled lock position, can be integrated in the central locking unit and in the drive control. We have also paid attention to lightweight construction with simultaneous robust design for the locking unit.

Locking unit closed



Locking unit open



BIDS® AM-H | BIDS® AM-S.

Drive system for the automotive industry.



BIDS® AM-H Sliding plug door, suspended

Preferably for van bodies and refrigerated vehicles.
Drive and guide system in the top area.

BIDS® AM-S Sliding plug door, upright

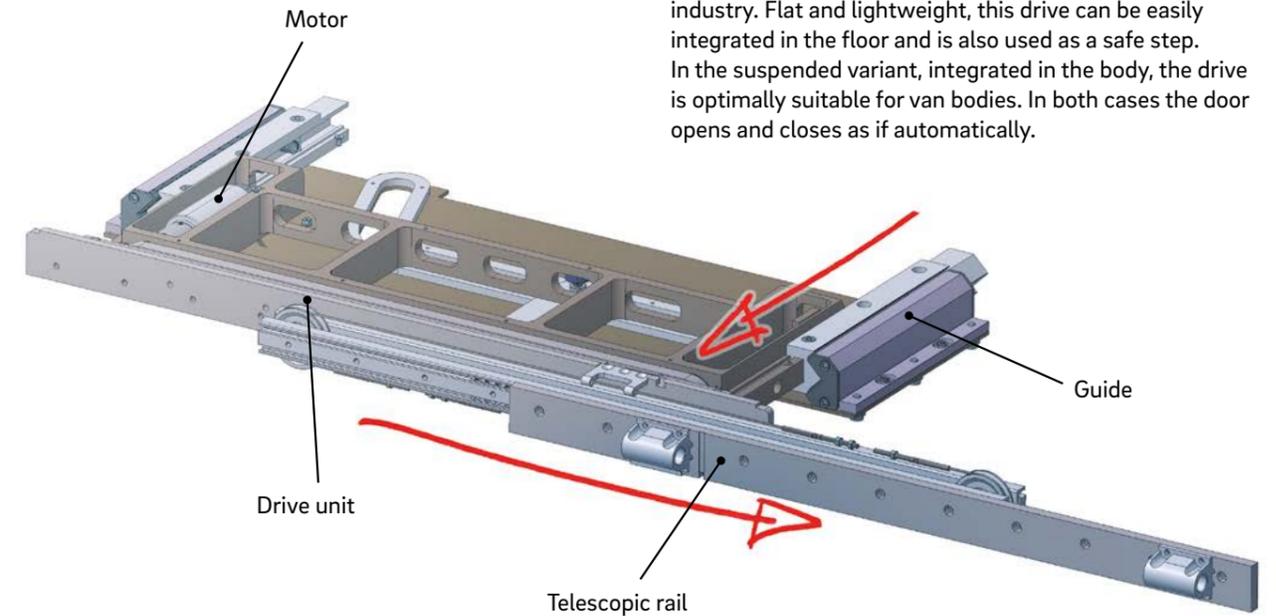
Preferably for cars and vans.
Drive and guide system in the bottom area.

Opening: vehicle specific
 Locking unit: Rotary latch
 Can be integrated in the central locking unit
 Control unit: own control unit can be modified to your requirements
 Kinematics: individually designable kinematics
 Door movement time: short response times
 Sensors: BMU / electric sensitive edges and light barrier / light grid, motor current sensing and displacement-time sensor

Opening: vehicle specific
 Locking unit: Rotary latch
 Can be integrated in the central locking unit
 Control unit: own control unit can be modified to your requirements
 Entrance: can also be used as a step
 Kinematics: individually designable kinematics
 Door movement time: short response times
 Sensors: BMU / electric sensitive edges and light barrier / light grid, motor current sensing and displacement-time sensor

Drive

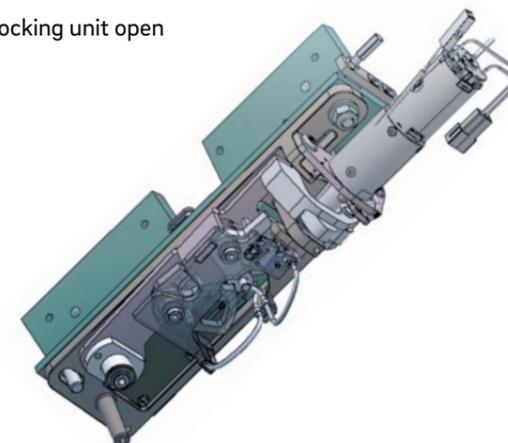
With our BIDS® we have transferred a tried and tested drive for rail vehicles to the requirements in the automotive industry. Flat and lightweight, this drive can be easily integrated in the floor and is also used as a safe step. In the suspended variant, integrated in the body, the drive is optimally suitable for van bodies. In both cases the door opens and closes as if automatically.



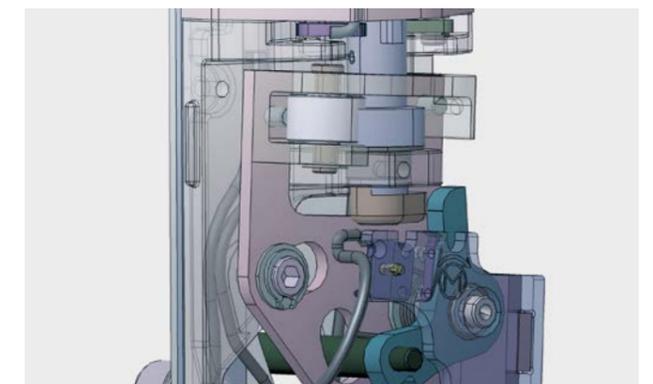
Locking unit

We can supply a rotary latch lock unit with closing aid suitable for the drive. This can be integrated in the central locking unit and in the drive control unit. Here too we have taken tried and tested technology from rail vehicle construction, modified it and adjusted its weight and performance optimally to the car.

Locking unit open



Locking unit (closed)



Components in the system. Lightweight and robust.

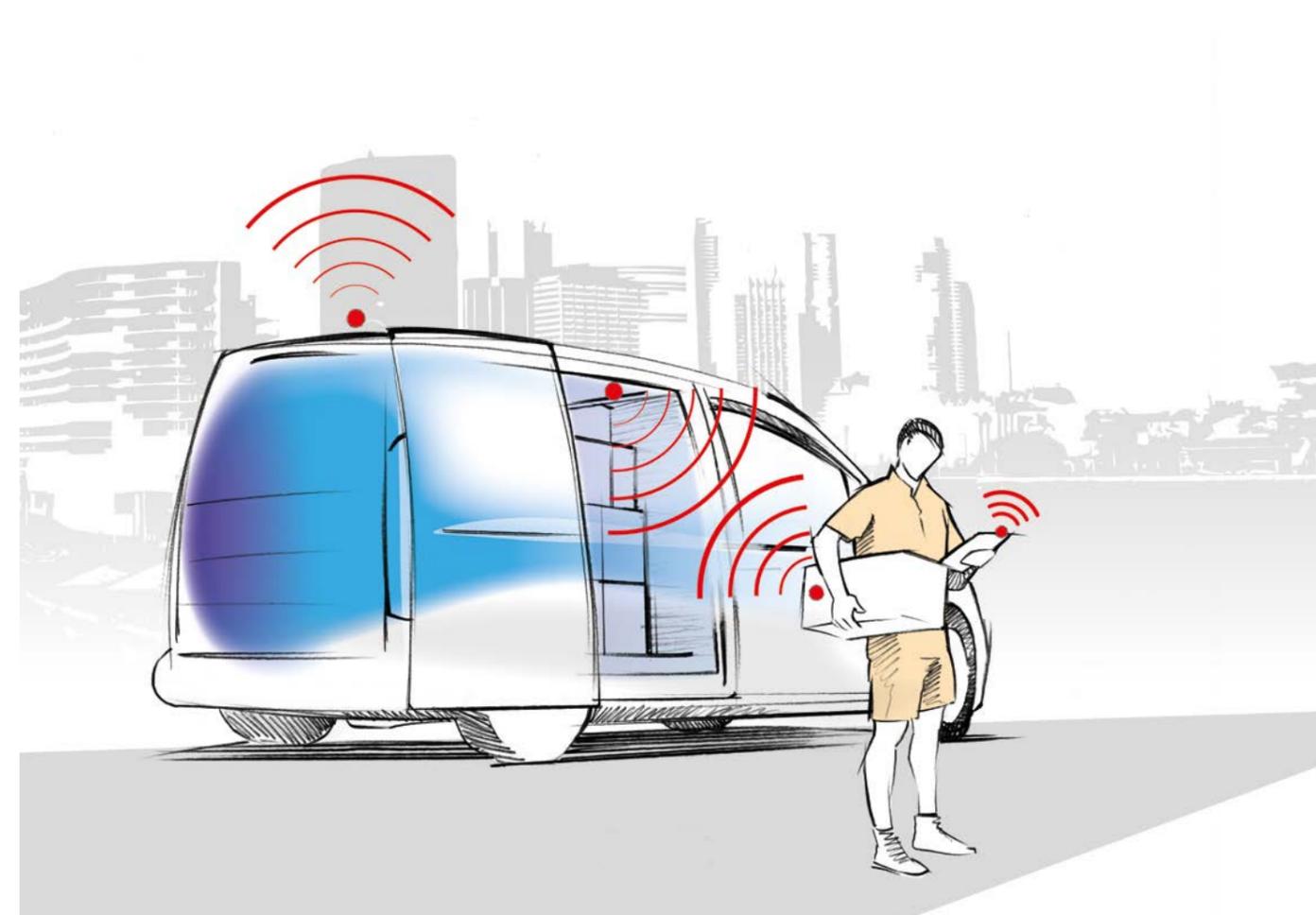


Our system components ensure that the sliding doors of your vehicle fulfil the highest standard: They are quiet, smooth and easy moving and safe. Well thought-through down to the fuel filler flap lock.

- Guide system with roller guide
- Rail system (in cooperation)
- "Door open" stop system
- "Door closed" stop system
- "Door open" end position fixing
- Z-fixing
- Y-anti-pull lock
- E-drive (in cooperation)
- Permanent power supply for doors



Partnership in development. Intelligent solutions.



In the development of door systems and components we are a tried and tested and reliable partner. With our extensive experience we are able to complete a development to series readiness quickly and reliably, or implement it as a special solution. Far more than 40 million components delivered to renowned manufacturers is an impressive number. However, we would rather convince you in direct cooperation – through lightweight and robust designs, with systems with visually, acoustically and technically convincing attributes.

As part of the Schaltbau Group we research and develop new applications for every aspect of the door system of the future. At the same time, valuable synergies are created be-

tween our business units. Modern sensors and tracking systems will make future delivery of goods substantially easier, by optimising and automatically acknowledging loading and unloading. The door system, as an interface between freight and humans, will be more intelligent and safer.

The new Bode sensor system secures many basic functions of the door system in the vicinity of the door, conveniently and wear free, and offers additional safety. Our in-house IT department adapts sensors and control units reliably to your interfaces.

Let us take a look together to see how we can convince your customers in future.



Door systems. for mobile spaces.

This much is certain.

By rail or by road – door systems from “Bode. Die Tür.” are in use worldwide. Reliable, robust and increasingly intelligently networked, we design the interface with the passenger.

For a good 50 years we have defined the interface with the passenger. By rail, by road and wherever our experience can offer a safe system. Safety is a good cue. On the one hand for passenger safety and on the other for reliable operation. The systems must be robust and yet at the same time lightweight in order to be energy optimised and meet the high requirements set.

From the initial development through to industrial production in small and large series – many brands trust our knowledge and our quality. An excerpt from our reference list is given on the right.





Made. by. Bode. Die Tür.

With German engineering and efficient industrial production, we implement door systems for vehicles all over the world. Despite the high degree of product, software and process standardisation, for us it is not a contradiction to actively maintain a culture which can be called mid-sized family – grown over a good 50 years. Many of our employees are second generation family members to work for Bode. You can feel this bond in our company through the commitment and enthusiasm of our workforce – a door is the first moment in which you experience the quality of a vehicle. Having a decisive role in this quality makes us proud.

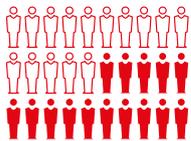
Our development department falls back on many solutions which, once reinterpreted, are suitable for different tasks. From the hatch door of a car through to the fully-networked door system in a high-speed train. We have the knowledge, acquired from many worldwide projects and markets.

Our goal is failure-free door systems. Intelligent networked systems help to use materials and energy sparingly and far-sightedly. Maintenance is signalled before wear can cause a failure. Sensors ensure greater safety and provide important feedback for personnel and transport operators.

This intelligence, combined with robust lightweight construction in increasingly compact versions, enables us to perform reliable life-cycle cost calculations. A fast-response worldwide service department is on hand. Just-in-time deliveries of complete systems – ready-assembled for fast and reliable installation – to us these are obvious requirements.

From our headquarters in Kassel we transport our standards and know-how to our branches on all continents.

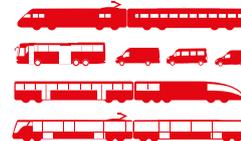
As part of the Schaltbau Group we understand vehicles integrally – one reason why we understand our customers so well.



Around 3,000 employees in the parent Group
of which around 1,600 in the Bode Group



31 locations worldwide in total
6 production facilities in the Bode Group



3 business units
1,000 synergies

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