LEADING IN ENTRANCE SYSTEMS
FOR HIGHSPEED TRAINS AND PASSENGER COACHES
PROVEN AND RELIABLE: ENTRANCE SYSTEMS UP TO 380 KM/H
INCREASING REQUIREMENTS MEETING TRAIN SCHEDULES AND HIGHER COMFORT EXPECTATIONS OF PASSENGERS are some of the new challenges the manufacturers of entrance systems are faced with. Notwithstanding this, safety, reliability and availability of entrance systems remain the key priorities. At the same time improvements for an easy use by persons with reduced mobility are requested.

As global leader in entrance systems for passenger coaches as well as for pressure-sealed door systems for high-speed trains, we cover the complete range of market requirements by our sliding plug doors E3 and DET from 600 to 1600 mm entrance width. The offer is complemented by a variety of door leaf types and access devices such as sliding or movable step systems. Further development is not only driven by a technical and functional excellence but also by long-term economic considerations. Our products are characterized by a particularly low-maintenance and easy-to-install design featuring the lowest life cycle costs.

IFE is globally renowned as a reliable partner for the supply of entrance systems. The range of offered services, however, goes far beyond this area and furthermore includes installation, commissioning as well as maintenance over the whole product life of our door systems, including spare parts management.
IFE SLIDING PLUG DOOR
SINGLE LEAF - OUTSIDE THE DOOR PORTAL

**DET-H**
HYBRID SYSTEM
ELECTRIC DRIVE
PNEUMATIC LOCKING DEVICE

**DET-E**
ALL-ELECTRIC SYSTEM
ELECTRIC DRIVE
AND LOCKING DEVICE

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THE IFE DET-H DOOR DRIVE is based on a robust ball bushing guide and may be flexibly integrated into the carbody. The door system is equipped with an electric motor, a pneumatic pressure-sealing device, is fully pressure-tight and dimensioned for loads of up to 10,000 Pa.

DOOR DRIVE ALL-ELECTRIC SYSTEM

THE IFE DET-E DOOR DRIVE is based on the proven solution of the DET-H and only needs one electric motor for the drive and the lock. Even if taken out of service the door system is unrestrictedly pressure-tight.

SEALING SYSTEM

THE PATENTED IFE SEALS for pressure-sealed door systems operate in a strictly passive way activated by the swivelling movement of the door leaf. Specially optimised sealing solutions are available for both types of drive.

LOCKING SYSTEM

THE ACTIVE LOCKS of the DET-systems have been in service for decades and are characterized by a reliable over dead centre locking principle and highest comfort due to their pressure tightness. Depending on the system, the locking system is controlled through pneumatic or mechanical interface on the drive.

DOOR LEAVES

BY USING new insulation materials and optimised bondings to the profile system, we are able to fulfil the highest acoustic and thermal insulation values. The flexible integration of a display is possible upon customer request.
IFE SLIDING PLUG DOORS
SINGLE LEAF - WITHIN THE DOOR PORTAL

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THE E3H-RIC CONVINCES by its rugged design that can even be combined with wide and heavy door leaves. The installation within the width of the portal and the reduced dimensions allow for its use in all vehicles and installation spaces. There is a purely mechanical activation of the optional folding step.

THE PATENTED IFE SEALS for pressure-sealed door systems operate in a strictly passive way activated by the swivelling movement of the door leaf. The lip sealing system of the E3H-RIC is also a robust passive sealing system with many proven field applications.

THE E3D IS BASED ON THE E3H and has been developed as a pressure-sealed variant for big entrance widths of up to 1600 mm. The four over dead centre locks guarantee the pressure-sealing for pressures of up to 8,000 Pa at 1600 mm width, even in case of being taken out of service.

HIGH RELIABILITY, optimized integration in the vehicle as well as an enhanced safety requirement are the most important properties to be fulfilled by our FLEX door control. Furthermore, the universal FLEX door control processes any supply voltage between 24 and 110 VDC.
SAFE AND RELIABLE: ACCESS DEVICES FROM IFE

A SAFE AND COMFORTABLE ACCESS CONTRIBUTES SUBSTANTIALLY TO THE PHYSICAL COMFORT of passengers and has a high significance for rolling stock operators and manufacturers. IFE offers various access devices for high speed trains and passenger coaches that are in line with the continuously increased requirements and make it easy for persons with reduced mobility to daily use railway vehicles.
THE IFE FOLDING STEP (RIC) for passenger coaches is linked to the door drive and needs no own drive and control components. Therefore, maintenance efforts are reduced, the reliability is improved and the installation space is minimised. The reduced number of components leads to a reduced installation and adjustment effort for our customers.

THE SWIVELLING STEP FROM IFE extends to a fixed distance, due to its kinematics. IFE offers various kinematic solutions that can be adapted according to the specific needs of a project. Our long-time experience puts us in a position to respond to specific requirements and to serve them by proven concepts.

THE SLIDING STEP X4 FROM IFE is characterised by its extremely compact design and its highest level of reliability. The statically determined 3-point guiding system with an integrated weight detection tolerates vehicle torsions and is free of jamming. The used materials guarantee an optimal protection against corrosion.

„Safety and reliability of our systems are our top priorities."
Martin Marzendorfer
Mechanical engineer
Assembly & Commissioning

RailServices offer a professional support from the initial installation of a door system and the accompanying training of customers’ local staff up to the installation of complete entrance system series for complete vehicles. Following customer wishes, specialists will be available at customer premises at firm conditions.

Repairs

Servicing of entrance systems is offered at fixed conditions and processing times and there is an additional possibility to plan them in regular intervals. A special advantage for the customer is the use of original IFE spare parts and modern testing tools which are being used for the generally defined standards and test procedures.

Maintenance

In order to permanently operate an entrance system efficiently, maintenance work must be carried out at regular intervals. In the framework of our services we also offer preventive maintenance contracts over the whole product life-cycle. The customer benefits from the experience of our service engineers, a high delivery availability and a solid quality of the original spare parts and the works carried out.

Modernization

In order to also keep existing vehicles at the leading edge of technology, RailServices offer consultancy, engineering and implementation of possibilities for modernization such as software updates, control system upgrades, retrofitting of new safety systems or the installation of completely new drives. This allows for entrance systems which have been in service for years to cope with the increased requirements.
SERVICE OVER THE WHOLE LIFE-CYCLE

Whether it is a single vehicle or a complete rolling stock fleet to be equipped – RailServices take over the installation and commissioning and deliver a reliable service from the first minute through the complete life of the vehicle.

Being part of the Knorr-Bremse Group, RailServices showcase the competence of the group on-site and ensure with its experienced specialists that customers “remain on track”.

Spare parts and service packages which are tailored to customer wishes go far beyond the usual scope and guarantee short reaction times and a straightforward on-site handling as well as a fast availability of the service engineers and the spare parts supplies.

The modernization of older vehicles as well as the retrofit of complete rolling stock fleets with state-of-the-art safety equipment are as much part of the portfolio as an active obsolescence management and the measurement of wear to prevent critical safety levels.

On the background of its competence and experience, RailServices take care of the rolling stock of our global customers to make sure that they meet the continuously rising requirements and the applicable safety standards.
SAFE IS SAFE: ENDURANCE TESTS LEADING TO MARKET MATURITY
WHEN IFE PRODUCTS SEE A TRAIN FOR THE FIRST TIME they have already overcome the hardest experience. The IFE testing and validation phase equals an alpine tour with a snow storm and temperatures far below freezing as well as a thunderstorm in a tropical summer. Furthermore, during the validation phase our entrance systems already meet high speed trains which they may probably never encounter in real operations.

During the time our entrance systems spend on the IFE test site, the highest importance is given to the validation of all parameters related to technical standards. The set values are clearly exceeded during tests, in order to start into real life with a sufficient safety margin. To cover the whole spectrum efficiently and individually in an optimal way, all necessary equipment is available in-house.

This includes a two-chamber climatic plant which is able to produce different ambient temperatures between -50 and +80 degrees Celsius between the inner and outer side of a door system as well as snow- and icemaking devices and an acoustic chamber. Our hydro-pulse machine applies real load levels of many tonnes as they occur in operation.

Furthermore, certain components and complete entrance systems undergo intensive endurance tests, simulating a multiple of the whole product life in just a few months. The results are directly and immediately integrated into our products.

1 + 4 Snow and ice tests of door systems and their components in the two-chamber climate plant which is also able to provide differential ambient temperatures from -50 to +80 degrees Celsius
2 Sand and dust test for system validation for desert areas
3 Tightness test of systems in the sprinkler system
MARKET LEADER WITH RESPONSIBILITY

“We are also delivering spare parts with highspeed because of our advantages through the locations all over the world.”

Milan Brtnik
Process engineer
THERE IS MUCH MORE IN EACH IFE PRODUCT than the supply of a system component for a rail vehicle. With IFE as a partner you are welcomed in the worldwide organization of the Knorr-Bremse Group with its range of comprehensive advantages.

Rolling stock manufacturers often face requirements for high import duties, local content or local service needs. In these cases we have access to a multitude of well established local manufacturing sites and service centers and offer suitable solutions.

Both our manufacturing sites in the Czech Republic (Brno) and in China (Qingdao) are supplying the complete product range and cover two major market areas. With our establishments spread all over the world we can offer our customers in Europe and Africa, Asia, Australia and America an optimal local support.

Close connections to our local sites are offering our customers major advantages in maintenance and spare parts stockage. We are also able to implement project specific concepts regarding local added value or series assembly.