



HÜBNER FrontAdd System

Saves energy thanks to improved aerodynamics

The HÜBNER FrontAdd System has been specially developed for improving aerodynamics of the train optimization of the train coupling. It consists of a special skirting that is fitted around the coupling. The integrated corrugated bellows moves in conjunction with the coupling, which enables also protection for the train coupling and also reducing noise levels at the driver's cab contributing significantly to improved aerodynamics of the train. At the same time, the skirting protects sensitive components, such as cabling, wiper motor and wiper tank. It is mostly applied at especially on regional and local transport commuter trains.

Characteristics:

- Exceedingly robust material for a long product life cycle using corrugated bellows and frames
- Pressure resistance up to 5200 Pa due to the frames
- Achieved sound insulation in the driver cab (cockpit): 2 dB
- Operating temperature: -30°C to + 80°C
- Fire safety standard: EN 45545-2 HL2
- Design: Convex and concave shapes available

Mobility | Making mobility happen.

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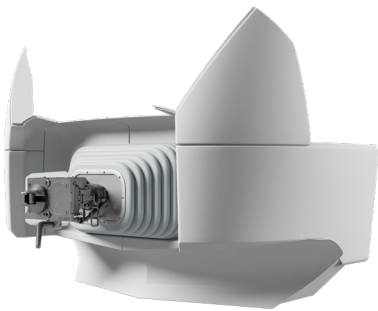


Advantages:

- Reliable protection of the coupling against sand, moisture, snow and small objects
- Additional front-end protection of the train (cabling, wiper tank and motor)
- No functional limitations with the coupler movements
- Optimized vehicle aerodynamics
- Easy access and installation
- Comprehensive compatibility
- No changes required on the front-end design (retrofitting possible)
- **Lower Costs:** Both in operation (with higher energy efficiency - 2%) and in maintenance requirements (with reduced wear of installed parts - LCC)
- **Top quality product:** Manufactured with HÜBNER's proven corrugated bellows
- **Scalable production:** Both large and small production runs fully supported
- **Individual solutions:** For a wide range of vehicle and coupling models

Variations of the HÜBNER FrontAdd System:

HÜBNER offers two different variants of the FrontAdd System

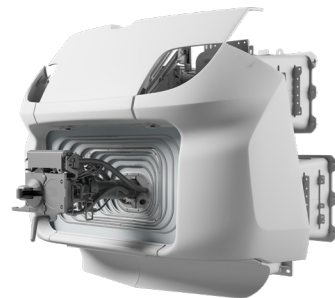


Convex Design

- Better aerodynamics of the train
- Quick release connection on the car for easy removal
- Elegant design

Concave Design

- Suitable for coupler with electrical head
- Screw-on connection at the car end





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