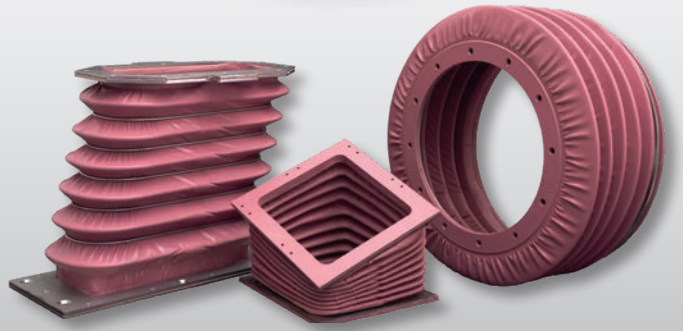
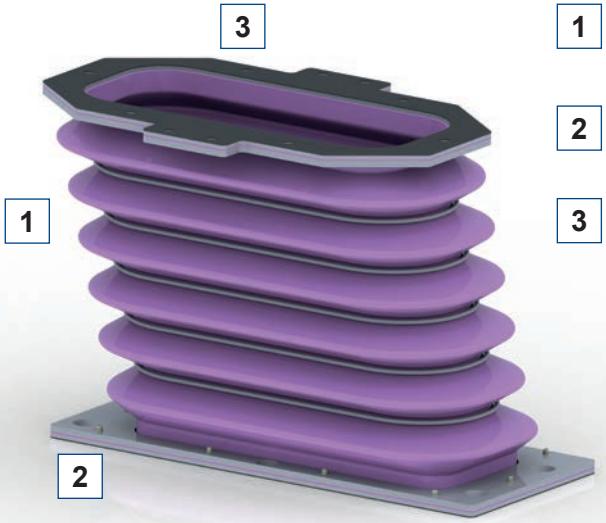
möllerwerke

PRODUCT INFORMATION

Traction motor ventilation bellows for railway vehicles



HIGHLIGHTS



1. Specific fold geometry, tailored to the movement profile
2. Individual mounting and installation systems
3. Ultra durable and field-proven

DESCRIPTION OF THE TECHNOLOGY

Traction motor ventilation bellows are products specially developed for the particular application. The connections can be designed depending on the installation situation on the wagon body or on the bogie. The connections (flanges) of the folding bellows have circumferential sealing surfaces. Backing flanges attached to the folding bellows by vulcanisation provide a homogeneous self-sealing secure connection. The number of folds is determined by the installation space and the expected movement sequences. The geometry of the traction motor ventilation bellows is defined by the connections and the pressure losses. The basic parameter is thereby the volume flow rate of air through the bellows. The folding bellows consist of a rugged silicone-aramid-fabric. The defined geometries are moulded on specially designed tools and tested where required. The folding bellows are stabilised with wire rings if necessary according to the operating requirements.

TECHNICAL DATA AND PRODUCT DESIGN

Customised fold geometry

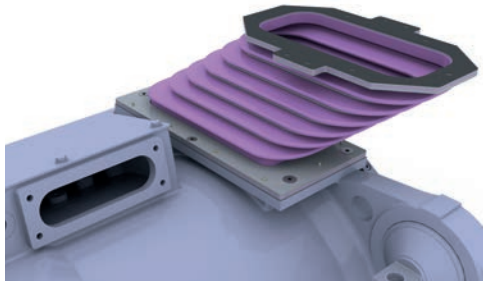
- Optimal movement performance even at extreme deflection
- Individual product geometry, tailored to the movement profile of the vehicle
- Application specific stability improvement via wire rings
- Collision protection against wearing of the bellow at unavoidable counter contours

Individual mounting and installation systems

- Specific mounting systems for various installation requirements available
- Individual design according to customer requirements
- Special solutions such as self-centric, mounting free and sealing system upon request
- System integration into existing applications possible (upgrade)

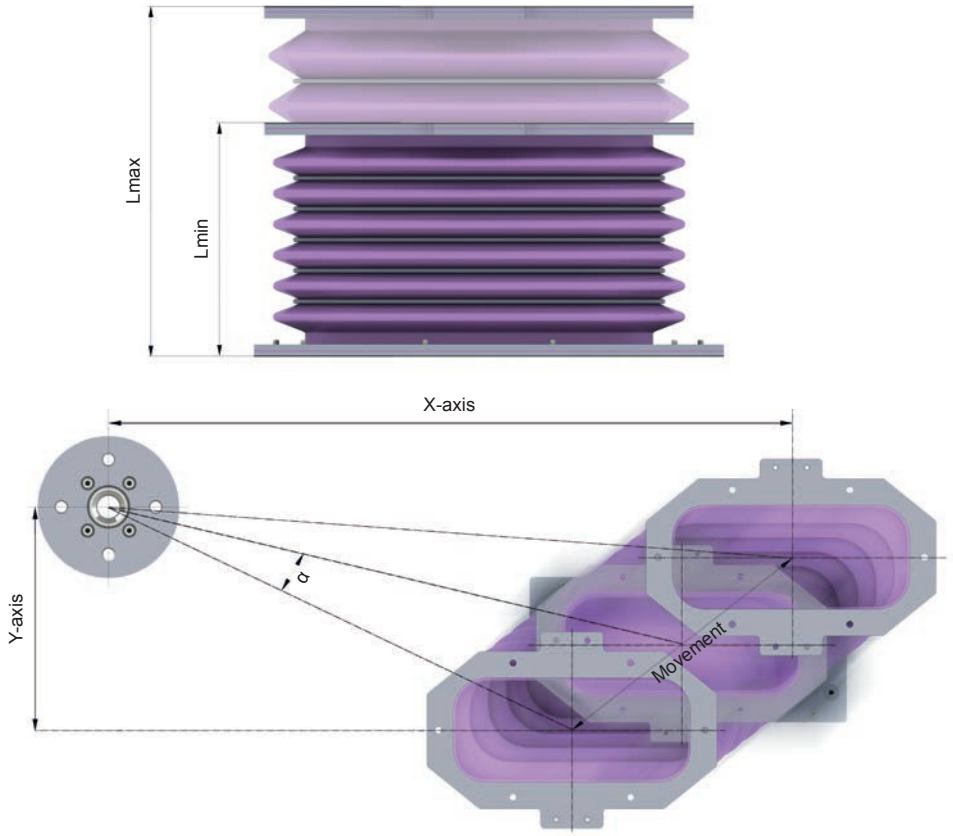
Durable through material and product setup

- Specially developed, robust silicon-aramid fabric
- Certification according to national and international fire and smoke protection norms for railway bellows
- Optimised abrasion-resistance for railway industry
- High resistance against environmental conditions and stress



PRODUCTQUALIFICATION

The maximum stipulated movement of a bellow for a new project is simulated with testing facilities. The long-term durability of the traction motor ventilation bellows can be tested before the start of serial production by calculation in testing facilities with pre-defined movement matrix over a defined period of time. Thereby the wear behaviour with various installation lengths and deformation sequences can be tested as well.



NORMS AND PARAMETERS

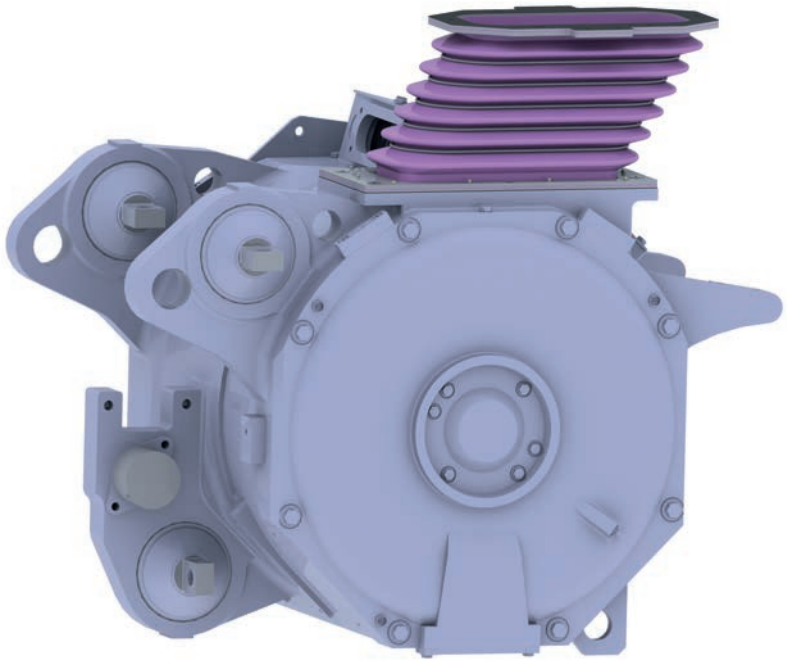
Fire protection classifications

- DIN EN 45545-2
- NF F 16-101
- DIN 5510-2
- NFPA 130
- GOST 12.1.04-89

Resistance

▪ Cold resistance	-50 °C
▪ Cold crack temperature	-60 °C
▪ Max. thermal stability	+180 °C

PRODUCT EXAMPLE



TRACTION MOTOR VENTILATION BELLOWS

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