

## SF 400

### Trailer bogie for passenger coaches

The bogie SF 400 was designed for push-pull service in locomotive-hauled passenger coaches. The maximum operational speed is 280 km/h.

The bogies for both, end- and centre coaches are equipped with air-spring-systems and can be used for single and double-deck coaches.

During the development of this bogie family, a lot of theoretical and practical investigations were performed together with Deutsche Bahn AG, in order to de-sign a modern, high performance and comfortable bogie family with high reliability and low life cycle cost.

The concept of the SF 400 enables the production of high performance bogies for a lot of applications, due to its modular design. The principle of the wheel-set guidance was derived from the service-proven bogie SF 300 and consists of two pins that are pressed in the bogie-frame and two guiding bushes in the axle box.

This kind of wheel-set guidance does not need any maintenance during the relevant maintenance-intervals and is more or less free of wear.

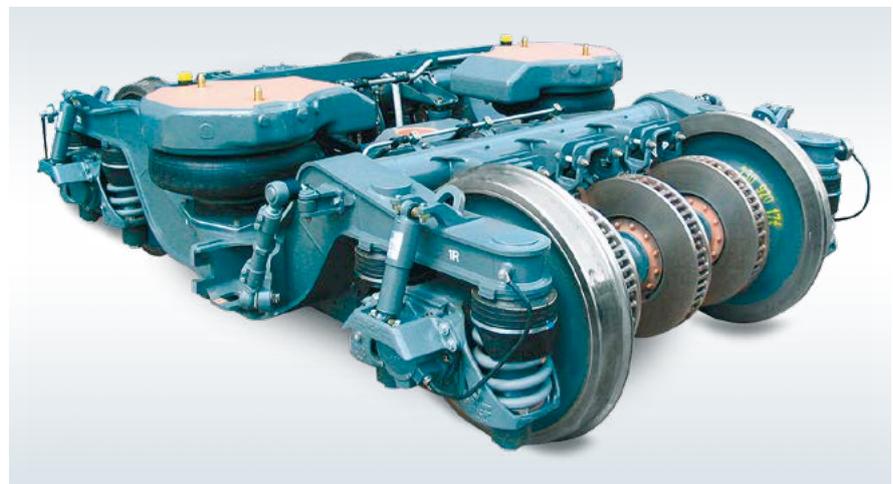
The open H-shaped bogie-frame is a high-sophisticated light-weight design with a low torsion resistance. Between the two longitudinal beams, there are two transversal beams with brackets for the disc-brake units.

Depending on the requirement, the bogies can be equipped with three or four brake units. Spring applied brake units and magnetic track-brakes are optionally available.

The secondary suspension system is designed as a controlled air-spring-system. Both air-springs are mounted in serial with a rubber emergency spring. This ensures operation with maximum speed, even when the air-spring is deflated.

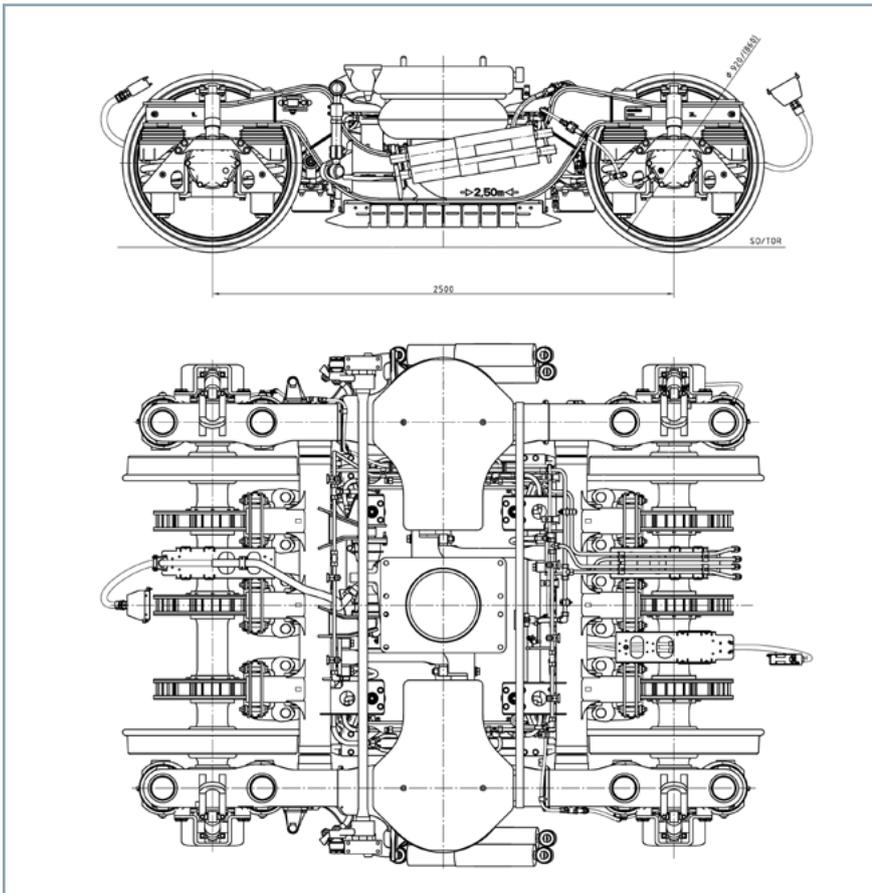
For damping of lateral and vertical movements, hydraulic dampers are installed.

The transmission of braking and acceleration forces between bogie and car-body is performed by a king pin, a yoke and two guiding rods.



## Technical data

Bogie	SF 400
Running speed	Max. 280 km/h
Axle load	17 t
Bogie height	989 mm
Wheelbase	2500 mm
Track gauge	1435 mm
Wheel diameter new/worn	920/860 mm
Smallest radius of curvature in operation/depot in service/workshop	150/80 m
Weight incl. track brake	7.1 t



## References

- ICE 2 Germany (1996-1998)DB
- Comfort sleeping coach Germany (2001-2004)
- ÖBB Sleeping coach Austria (2000-2001)
- ÖBB Double deck coach Austria (1997-2008)
- Trenitalia Double deck coach Italy (2004-2011)
- SBB Double deck coach Suisse (2005-2008)
- ÖBB Hotel-coach Austria (2006)
- FER Double deck coach Italia (2007-2008)
- ÖBB Railjet Austria (2008-2011)
- Changchun Railway Vehicles Comp. China (2009)



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The information given in this document contains general descriptions of technical possibilities which may not always be available in a particular case. The requested performance characteristics have therefore to be defined in the event of contract ward for the particular case in question.