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SF 500

Bogies for high-speed trains

The SF 500 bogies are a further development of the SGP 400 bogies, 950 of which are in use on the ICE2 of the Deutsche Bahn AG. They are designed for electric railcar trains and modern high-speed trains and provide optimum ride quality.

Orders have been received from the Deutsche Bahn AG, the Netherlands Railways, the RENFE and many other operators for more than 6500 bogies.

The modular design means that the SF 500 bogie can be designed both as motor bogies and as trailer bogies and can be fitted beneath carriages with or without bolster.

Bogie weight is significantly lower than that of comparable bogies due to the use of light-weight components.

Extensive calculations on running characteristics led to this design distinguished by its optimum stability and ride quality values as well as excellent axle guidance behaviour.

A service proven link system is used for axle guidance. Laminated guides can also be used as an alternative.

The bogie frame is designed as a flexible, open H-Frame.

Excellent ride quality is achieved in the secondary suspension system by the high-tech air suspension system and the provision of large air volume.

The pivot, the yoke and the two traction rods are proven designs and similar to the concept of the ICE2.

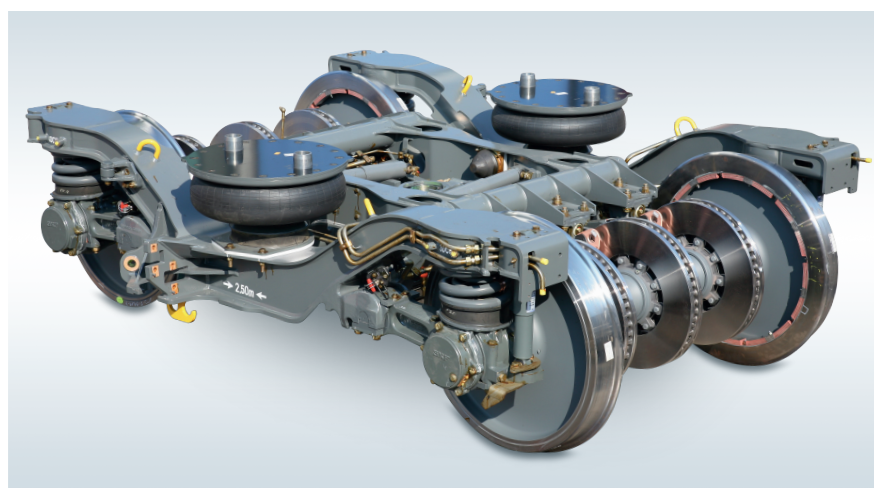
Torque transmission from the lateral traction motor is achieved by a partially suspended, low-noise gear per axle together with spiral-toothed coupling.

Bogie traction motors are flexibly suspended in the bogie by a motor support structure and an innovative laminated spring damper system.

Suspension is designed taking running stability and acoustic requirements into consideration.

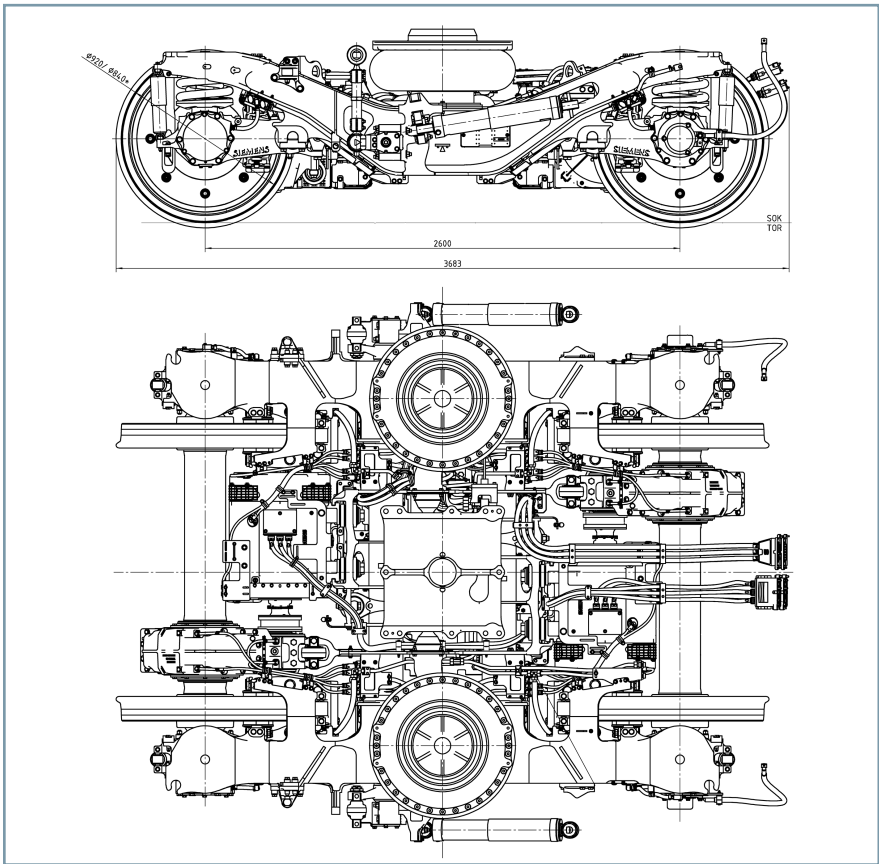
Redundant-type hydraulic yaw dampers are used to stabilise running behaviour at high speeds.

The trailer bogies are equipped with a mechanical disc brake system with 2, 3 or 4 discs per axle and a non-wear eddy-current brake. On the motor bogie, wheel disc brakes are used.



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Technical data	
Bogie	SF 500
Running speed	Max. 350 km/h
Axle load	Max. 17 t
Continuous power per wheelset	500 kW
Starting tractive effort per wheelset	Max. 19 kN
Wheelbase	2500 mm
Track gauge	1435-1520 mm
Wheel diameter new/worn	920/830 mm
Smallest radius of curvature in operation/depot in service/workshop	150/120 m
Bogie height	1045 mm
Weight with centre pivot and bolster	9.2/7.5 t



References

ICE3 – DB AG & NS
 AVE S103 – RENFE
 Velaro RUS – RZD
 Velaro CN – MOR China
 Velaro D – DB AG
 Velaro Eurostar
 ICx – DB AG



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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.