

FLEXX ECO Bogies Defying Convention



Bogies

BOMBARDIER

◁ FLEXX Eco Bogies ▷

The Future is Already Available ▷

With almost 1,000 units in operation worldwide, the reliability and operational benefits of the **FLEXX Eco** have been proven. The excellent stability properties allow its use not only for commuter and regional applications but also for high speed. The **FLEXX Eco** bogie family is characterized by an extremely compact and low weight design: **30% reduction in total bogie mass and unsprung mass!** In addition, the **FLEXX Eco** design also enables significant reductions in energy consumption and noise emission.

Characteristics

- Applications for commuter, long distance and high-speed trains
- Torsionally flexible frame
- Primary suspension with rubber metacone springs and traction rods
- Lightweight inboard bearing wheelset
- Hollow axle with large diameter bore
- High comfort due to secondary suspension with airspring
- Additional air volume in the adapter
- Wheel mounted disc brakes
- Magnetic track brake as option

Technical data

• Gauge	1,435 mm
• Wheel base	2,250 to 2,500 mm
• Wheel diameter	780 mm
• Maximum speed	160 to 200 km/h
• Mass (incl. centre pivot and interface bolster, without drive)	4.0 to 4.6 t
• Axle load	13.6 to 15.5 t
• Height over secondary suspension	900 to 960 mm
• Brake disc diameter	645 mm
• Power	300 to 500 kW
• Length	3,100 to 3,300 mm

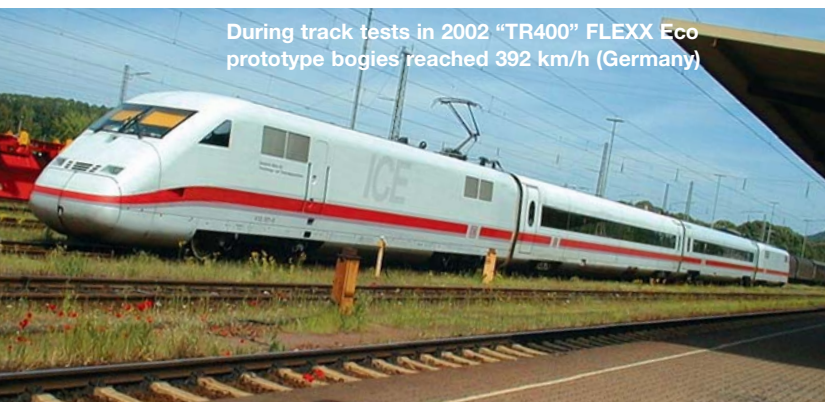
Voyager, high speed DEMU for Virgin Rail (UK)



Meridian, regional DMU for Midland Mainline (UK)






During track tests in 2002 "TR400" FLEXX Eco prototype bogies reached 392 km/h (Germany)





Your operational benefits – FLEXX Eco bogie vs conventional bogie

Category	Conventional	FLEXX Eco	Technical background
Weight			<p>The integrated design of FLEXX Eco bogie with inboard bearing and short wheelbase results in:</p> <ul style="list-style-type: none"> • Low weight frame (reduced transom length) • Low weight wheelset (reduced stress level on axle, hollow shaft axle, small wheel diameter) • Low axle load
Unsprung mass			<p>Bogie size comparison:</p>  <p>Legend: ■ FLEXX Eco ■ Conventional</p>
Space required			
Life cycle costs			<p><i>FLEXX Eco's maintenance costs savings</i> are mainly driven by:</p> <ul style="list-style-type: none"> • Low wheel wear due to low unsprung mass and improved curving performance • Low overall component maintenance due to: <ul style="list-style-type: none"> - Low dynamic energy level bearings - Minimum quantity of hydraulic dampers - Easy access to brake units
Track access charges			<ul style="list-style-type: none"> • In many countries the operator is charged for access to the track • In Great Britain a variable charging system is used, considering vertical track damage based on speed, axle load and, most significant, un-suspended mass

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Bombardier Transportation

Siegstrasse 27
57250 Netphen, Germany

Tel +49 271 702 0
Fax +49 271 702 396

www.bombardier.com



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