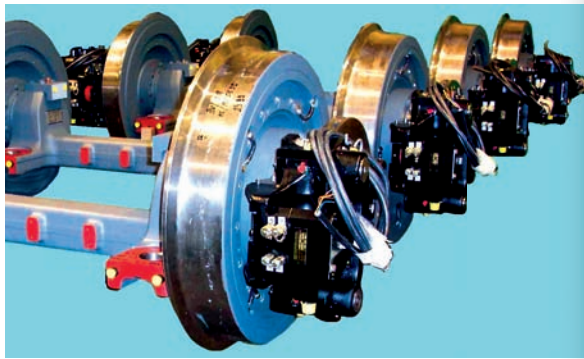


Low Floor Solutions



KEY BENEFITS OF GHH-VALDUNES SOLUTIONS

TAILOR-MADE SOLUTIONS, BECAUSE EACH PROJECT IS UNIQUE

GHH-Valdunes designs its solution following the specific requirements of bogie, drive and brake modules.

Meter or standard gauge, restricted spaces, high loads or severe operating conditions. Bogie or running gear, wheelsets or independent wheel axles. **GHH-Valdunes** provides the solution.

READY TO INSTALL, BECAUSE SYSTEM ENGINEERING IS OUR STRENGTH

GHH-Valdunes develops and delivers a complete solution, from wheel and axle to bearing system and speed sensor, ready to install in the bogie or running gear.

ATTRACTIVENESS AND COMFORT, LOW-FLOOR AS A KEY FEATURE

The systems of **GHH-Valdunes** provide vehicles with the improved accessibility of low floor. Resilient wheels of **GHH-Valdunes** contribute to a significant reduction of rolling noise and, more impressively, squealing noise. For passenger comfort, for residents quality of life and for the environment.

RELIABLE DESIGN, REDUCTION OF MAINTENANCE COSTS

A robust and service-proven design, a strict respect of manufacturing quality and a thoroughly studied maintainability ensure low costs for operation and maintenance. **GHH-Valdunes** offers tailor-made service packages, from operation consulting to in-house service.

SOME OF OUR REFERENCES

Alstom, Bombardier Transportation, Siemens, Skoda, Stadler...

Networks using GHH-Valdunes low-floor solutions : Berlin, Dresde, Düsseldorf, Francfort, Kassel, Mannheim (Germany), Vienne (Austria), Bruxelles (Belgium), Marseille, Nantes, Strasbourg (France), Wroclaw (Poland), Bâle, Berne, Genève, Zurich (Switzerland), Adelaide (Australia), Hiroshima (Japan)...

IMPROVED ACCESSIBILITY

TAILOR-MADE SYSTEM SOLUTIONS READY TO INSTALL

PROVEN DESIGN AND OPTIMISED MAINTENABILITY

REDUCTION OF ROLLING AND SQUEALING NOISE

FROM DRIVEN WHEELSET TO SWIVEL-MOUNTED INDEPENDENT WHEEL UNIT, HIGH TECH FOR LOW-FLOOR

GHH-Valdunes is the partner of the manufacturers of low-floor Light Rail Vehicles.

From development and engineering to production and assembly, the complete wheelset system is the core of our expertise.

Our products fulfil the requirements of any specific vehicle platform:

- Driven and non-driven wheelsets,
- Independent wheel axles with cranked axles
- Independent wheel unit with or without swivel-mounted wheels,

The systems are supplied with resilient wheels of the extensive product range of **GHH-Valdunes** for a significant reduction of noise and vibrations.

 Personalised solutions, a real expertise

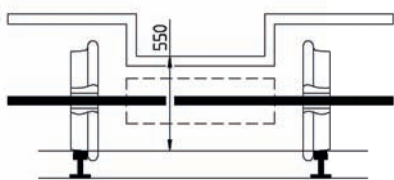


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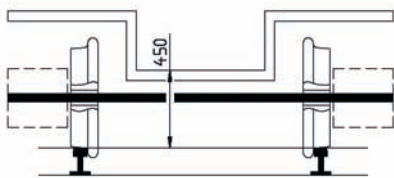
Low Floor Solutions



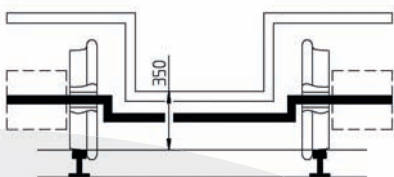
STEP BY STEP TO A LOWER FLOOR LEVEL



- **Challenge:** drive and brake between the wheels, but with limited height.
- **GHH-Valdunes solution:** driven and non-driven wheelsets.
- **Result:** Floor level of 550 mm.

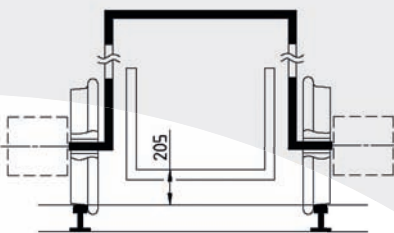


- **Challenge:** no drive nor brake between the wheels.
- **GHH-Valdunes solution:** driven and non-driven wheelsets.
- **Result:** Floor level of 450 mm.



- **Challenge:** no drive nor brake between the wheels, independent wheels.
- **GHH-Valdunes solution:** independent wheel axles (with cranked axle) or independent wheel units.
- **Result:** Floor level of 350 mm.

ONE STEP LOWER: ULTRA LOW FLOOR



- **Challenge:** running gears with portal frame (ULF).
- **GHH-Valdunes solution:** swivel-mounted independent wheel units, fixed on portal frame.
- **Result:** Floor level of 205 mm.



GHH-VALDUNES
www.ghh-valdunes.com

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