RESILIENT WHEELS

- REDUCED UNSPRUNG MASS
- REDUCTION OF VIBRATION AND NOISE
- EASY REPLACEMENT OF WHEEL TYRES
- MAINTENANCE AND SERVICES

KEY BENEFITS OF MG-VALDUNES SOLUTIONS

TAILOR-MADE SOLUTIONS, BECAUSE EACH PROJECT IS UNIQUE

Specifics like: **small diameter, high wheel load, limited space envelope, wide range of stiffness.**

MAINTAINABILITY, BECAUSE SERVICE COSTS MUST BE MINIMAL

One common feature for all our wheels: a split design. Three steel parts: a wheel tyre, a wheel body and a wedge ring. In between, some prestressed rubber elements: one rubber ring or two rubber rings. **Results: a very easy replacement of tyres and rubber elements, with hydraulic press.**

RUNNING COMFORT, FOR THE PASSENGER, THE RESIDENT, THE VEHICLE AND ITS TRACK

Proven by field measurements or positive customer ratings. MG-Valdunes resilient wheels provide **a very efficient reduction of shocks and vibrations.** With their low radial stiffness, the VUT™ or VUT NEO™ wheel can replace **a primary suspension or accommodate specific (low floor) bogie designs, e.g. direct motor drives.**

NOISE REDUCTION

MG-Valdunes resilient wheels decrease rolling noise and squealing noise in curves. In case of additional requirements, **MG-Valdunes proposes customised noise absorption systems,** like rings, absorbers, mounted on the wheel tyre.

VUT™ Wheel.

PERSONALISED SOLUTIONS
A REAL EXPERTISE

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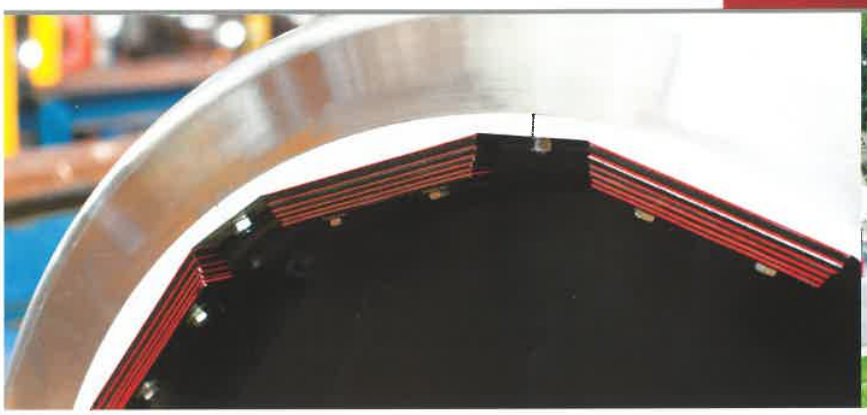
NOISE REDUCTION



TRAMWAYS AND LIGHT RAIL VEHICLES

- **Speed:** up to 80 kph.
- **Challenge:** Squealing noise, especially in tight curves, impairing passenger comfort and generating public nuisance. Low or ultra low floor vehicles.
- **MG-Valdunes solution:** resilient wheel, with wide range of radial stiffness - from rubber sprung wheel to VUT™ low stiffness wheel. Potential use of damping devices according to specific needs (damping rings, vibration absorbers, permanently fixed or removable).
- **Result:** squealing noise reduced up to 10 dB(A).

METROS, TRAM-TRAINS AND SUBURBAN TRAINS

- **Speed:** up to 120 kph.
- **Challenge:** Squealing noise in urban zones, impairing passenger comfort and generating public nuisance. Vibration propagation in densely populated areas.
- **MG-Valdunes solution:** resilient wheels, damping rings and optimized version that provides high efficiency and repeatability (VLN™-OPT).
- **Result:** Squealing noise reduced up to 15-20 dB(A) on specific frequencies.

MAIN PASSENGER LINES AND FREIGHT TRAINS

- **Speed:** up to 200 kph.
- **Challenge:** rolling noise, detrimental to passenger comfort, generating public nuisance and not compliant to noise regulation or directive.
- **MG-Valdunes solution:** composite vibration absorbers; VMS™ low stress wheel coupled with composite braking blocks.
- **Result:** noise reduction up to 5-7 dB(A).

HIGH AND VERY HIGH SPEED TRAINS

- **Speed:** 200 kph and above.
- **Challenge:** rolling noise, detrimental to passenger comfort, generating public nuisance and not compliant to noise regulation or directive.
- **MG-Valdunes solution:** optimised wheel geometry coupled with dampening device or shields.
- **Result:** standard noise reduction up to 4 dB(A).

OUR BUSINESS SPIRIT
INNOVATION & PERFORMANCE

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NOISE REDUCTION

REDUCTION OF NOISE AND VIBRATION

PASSENGER COMFORT

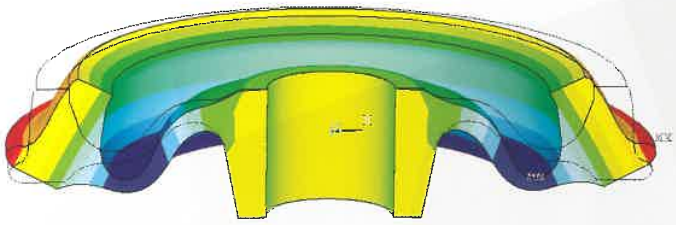
RESPECT OF NOISE DIRECTIVES AND REGULATIONS (NOISE TSI)

MG-VALDUNES OFFERS CUSTOMISED SOLUTIONS AND ITS WIDE EXPERTISE

- Solutions for squealing and rolling noise.
- Wheels specifically designed to reduce noise and vibrations, through optimised geometry.
- Damping devices, permanent or replaceable, for easier maintenance.
- Acoustic tests facility and simulation tools (STARDAMP, Deufrako).

COMPLETE SYSTEMS SPECIFICALLY DESIGNED FOR DIFFERENT MARKETS

- **Urban transportation:** Tramways, LRVs and metros.
- **Suburban transportation:** Tram-trains and trains.
- **Passenger transportation:** Main passenger lines.
- **High speed and very high speed trains.**
- **Goods transportation:** freight trains.



PERSONALISED SOLUTIONS
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RESILIENT WHEELS

VUT™ Wheel.

VUT™ OR VUT NEO™

The VUT™ OR VUT NEO™ renders primary suspension unnecessary, and allows a wheel hub integrated drive.

Features

- Low radial stiffness.
- Wheel diameters from 590 mm to 715 mm.
- Wheel loads up to 60 kN.
- Maximum vehicle speed: 80 kph.

Special benefits

- High level of passenger comfort.
- Compact wheel including primary suspension function.
- Reduced maintenance downtime.
- Improved safety by limited axial deflection and V-shaped tyre and rubber rings.

Since 1998, more than 15'000 VUT™ wheels in operation.

MAINTENANCE & CUSTOMER SUPPORT

- Deliveries of complete wheels for new applications or kits for maintenance.
- Safety.
- Reliability.
- Short lead-time.
- Spare parts management.
- LCC (Life Cycle Cost) optimization.

STANDARD TRAMWAY WHEELS

Ideal solution for modern low flow light-rail vehicles with limited installation place, small diameter and relatively high wheel load. These wheels are well adapted for conventional tramway and Tram-train applications.

Features

- Medium radial and high axial stiffness.
- Wheel diameters from 400 mm to 880 mm.
- Wheel loads up to 75 kN.
- Minimum space required - one rubber ring only.

Special benefits

- Reduced maintenance downtime.
- Easy and fast wheel tyre replacement.
- Easy inspection of earthing shunts.
- Light weight.
- Improved safety by limited axial deflection.

SOME OF OUR REFERENCES

Car builders: Alstom, Bombardier...

Some networks using VUT™ wheels: Melbourne (Australia), Bordeaux, Lyon, Mulhouse, Paris, Strasbourg, Valenciennes (France), Dublin (Ireland), Barcelona, Madrid, Tenerifa (Spain), Tunis (Tunisia), Rabat (Morocco)...

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