



## BACKGROUND

As early as 1975 we were developing **new metallurgy**, steel cleanliness and quality assurance procedures to overcome problems of rim shatter defects and of tread on the first high speed trains in France (250 km/h). We have built on this experience to become the **world leader in high speed train wheel manufacturing** (current every day speeds of 320 km/h)

## SOLUTIONS

- **Homogeneous continuous** casting process
- **High cleanliness** steel grade
- **Homogeneous heat-treatment and machining** to rectify wheel run-out
- **NDT control** and steel cleanliness inspection

## WORLDWIDE EXPERIENCE

More than 40 years of knowledge and experience with **more than 350,000 VHIS products** supplied for all main projects (KTX, KTX2, EUROSTAR, THALYS, TGV PSE, TGV A, TGV 2N, TGV EURODUPLIX, TALGO 350, ACELA, ICE, AVE, AGV)

## OUR BUSINESS SPIRIT INNOVATION & PERFORMANCE

## BENEFITS

- Improved safety
- Increased wheel life
- Reduced downtime
- Reduced life cycle cost
- Reduced track wear

## OUR MAIN REFERENCES

Alstom, Bombardier, SNCF (France), DB (Germany), NTV (Italy), Renfe, Talgo Patentes (Spain), SNCB (Belgium), CRRC (China), Hyundai Rotem (Korea), Amtrak (USA), Via Rail (Canada), TCDD (Turkey), Talgo (Saudi Arabia)...



OVER 360 KM/H

HIGH RELIABILITY AND SAFETY

PROVEN PROCESS OVER 40 YEARS OF  
EXPERIENCE

**Unique service record** on main high speed train  
lines (from 250 km/h up to 360 km/h)

**Control** of the steel shop process (metallurgy and  
steel cleanliness) and automatic Ultrasonic Testing  
(FBH dia  $\leq 1\text{mm}$ )

**Noise reduction** solutions from 200 to 360 km/h

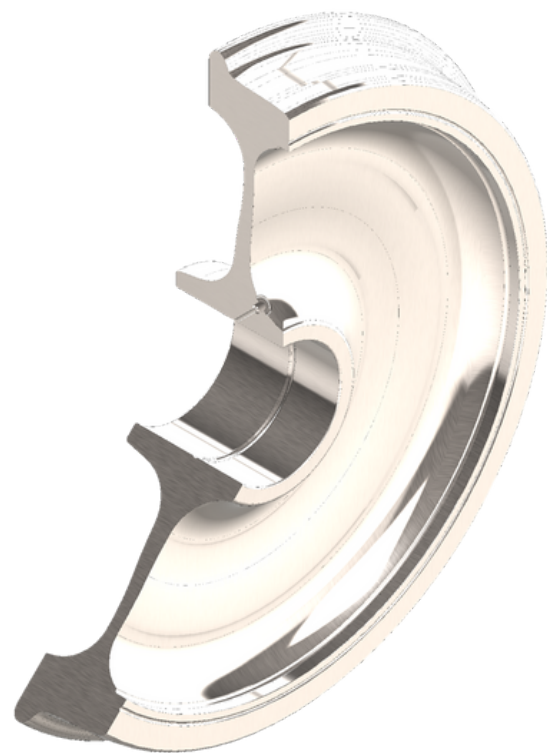
**Decreased maintenance** downtime through  
increased average wheel life (2.5 Mkm) and quality  
improvements

**High level of wheelset protection**

- Corrosion protection and impact resistance  
(thick coating & shells)
- Compliance to EN 13260, EN 13261 and to  
EURAXLES recommendations
- Easy maintainability

EN 13262, EN 13979-1 and HS TSI

**WHEEL COMPLIANCE** 



**PERSONALISED SOLUTIONS**  
**A REAL EXPERTISE**