

IMPROVEMENT PASSION  
COURAGE GROUP SPIRIT  
PEOPLE CUSTOMER SUCCESS

**FORGING  
VALUES  
IN RAILWAY  
SOLUTIONS**



LOOK BEYOND



## OUR VISION

The global and reliable Partner  
for the sustainable progress of mobility and industry.  
Passion, talent and creativity  
for advanced Customer-orientated solutions.

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## ABOUT US

Since 1856, Lucchini RS Group has been a leader in the design and production of rolling stock, castings and forgings for all industrial sectors. The strengths of the Group are: the integrated production facilities, from the production of steel to the assembly of finished products, the competence and know-how of people, and an organisation, wholly focused on customers and markets.

For the Railway Sector, the Group manufactures a wide range of products: wheels, axles, tyres and wheelsets for all applications such as high speed, intercity, heavy haul and mass transit system. Lucchini RS Group meets the international demand through a network of companies in Italy, the United Kingdom, Sweden, Poland, Belgium, Austria, India, China, South Africa and North America.

Our Group provides turnkey solutions, offering full support during all stages of maintenance, from the manufacturing and delivery of spare parts to re-engineering, backed by years of experience.






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## SERVING GLOBALLY

Being a global player, Lucchini RS has service centres all over the world, offering local support.

**Legend**

|   |                          |   |                             |
|---|--------------------------|---|-----------------------------|
|  | Steel mill and hot works |  | Wheelset maintenance center |
|  | Production site          |  | Gearbox maintenance center  |
|  | Commercial branch office |  | Bogie maintenance center    |



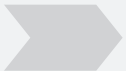


## IRONCLAD SUPPLY RESILIENCE

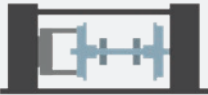
The Lucchini RS Group integrated production facilities guarantee full product traceability, OTD adherence, production flexibility, shorter lead times and buffer stock availability.



Steel making



Forging &  
Heat Treatment



Machining,  
Assembling & Service



Design, Metallurgy,  
R&D & Testing



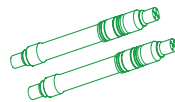
## WHEELS THAT KEEP THE WORLD ON TRACK

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### WHEELS

Railway wheels are made of prime quality steel heat-treated for an optimised service performance, designed for all applications with a diameter range from 300 mm up to 1500 mm and an axle load up to 45 t.



### AXLES

Railway axles are designed, forged and heat-treated to withstand the most severe service and environmental conditions.



### WHEELSETS

Safe, reliable & light wheelset solutions are designed to reduce unsprung masses and optimise TLCC.



### TYRES

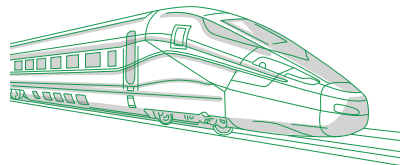
All types of tyres are produced to meet each customer's requirements.

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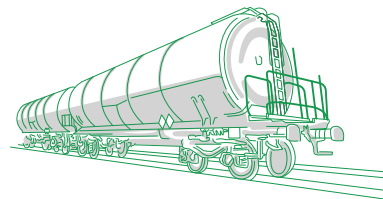


## WHERE WE MAKE A DIFFERENCE

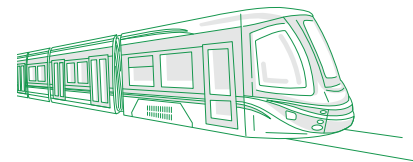
### HIGH SPEED



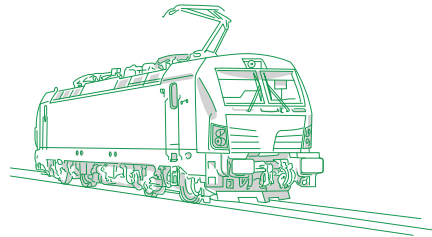
### FREIGHT



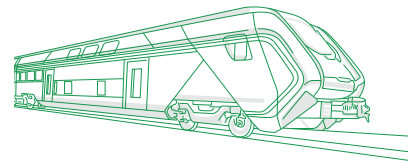
### LIGHT RAIL & METRO



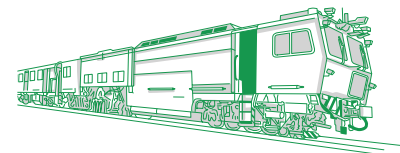
### LOCOMOTIVE



### PASSENGER



### ON-TRACK MACHINES





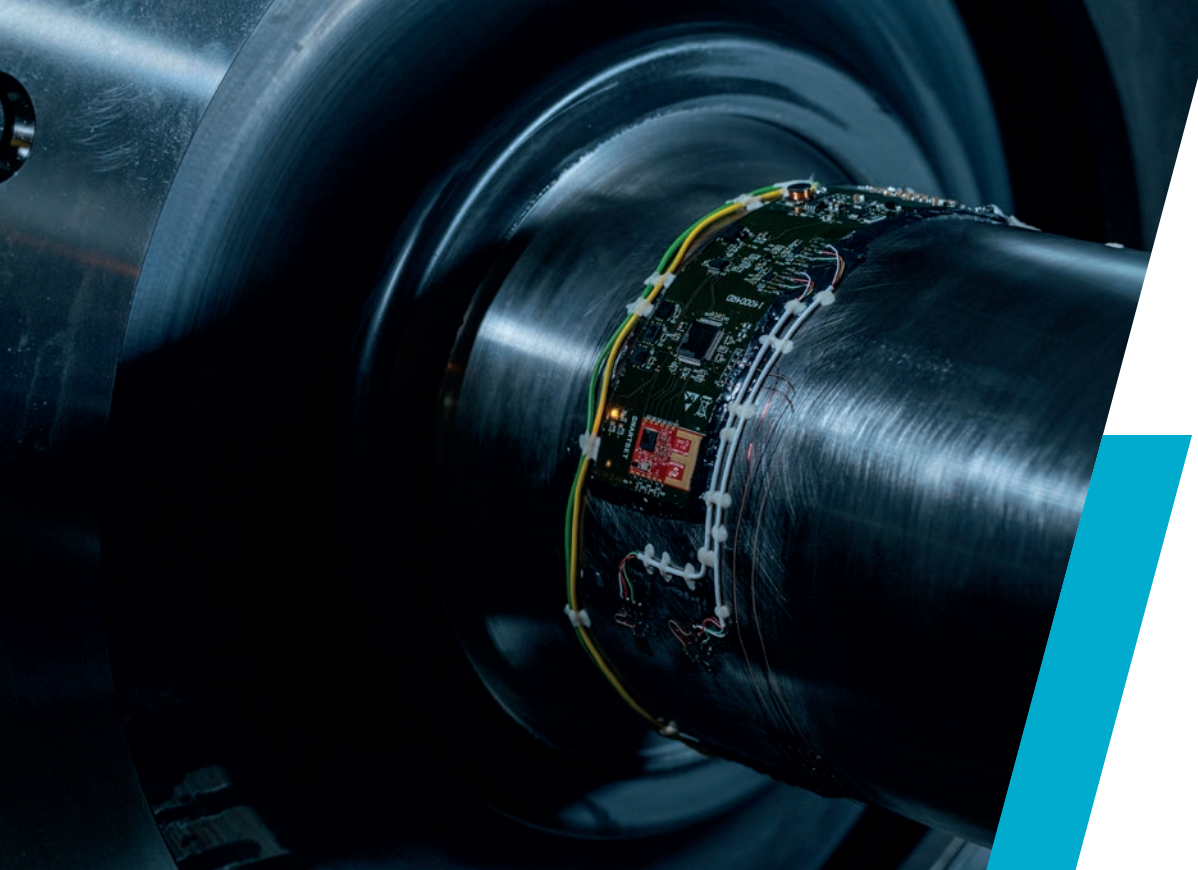
# FORGING VALUES IN DATA

Our AI-powered Smartset® Diagnostic solutions allow OEMs and train operators to identify the suitable NDT inspection intervals based on the unique characteristics of the service condition, bringing down maintenance stoppages.

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## **SMARTSET<sup>®</sup> LOAD**

Powered by Starcrack algorithm, the sensor monitors wheelset load spectra and calculates the optimal service NDT inspection intervals.



**Reduce maintenance cost**



**Boost ROI**



**Improve railway safety**



FIND OUT MORE

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| VALUE IN

**DURABILITY**

# FORGING VALUES IN DURABILITY

We provide a complete range of proprietary steel grades with specific features, improving wheel performance and properties.

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## **UPLOS®**

### **BEST FOR**

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Improvement within current standards

### **MARKETS**

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Freight Wagons, Mass Transit, Light Rail Vehicles, Metro, Locomotives

### **REFERENCE STANDARDS**

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EN, AAR, JIS, GOST

## **SUPERLOS®**

### **BEST FOR**

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Severe environmental and loading conditions

### **MARKETS**

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High Speed, Heavy Haul

### **REFERENCE STANDARDS**

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EN, BS, High Speed in China

## **ARCTICLOS®**

### **BEST FOR**

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Applications for Nordic and freezing environments

### **MARKETS**

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High Speed, Heavy Haul

### **REFERENCE STANDARDS**

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EN

## **SANDLOS®**

### **BEST FOR**

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Applications for desert environments

### **MARKETS**

---

High Speed, Heavy Haul

### **REFERENCE STANDARDS**

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AAR

## **HYPERLOS®**

### **BEST FOR**

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Application with tread-braked wheels

### **MARKETS**

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High Speed, Freight Wagons

### **REFERENCE STANDARDS**

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EN

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## FORGING VALUES IN SAFETY

Our goal is to assist clients with services, solutions, and processes that enhance safety across the entire product lifecycle.

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## **LURSELL®**

Anti-impact shell for axles, protected by conventional anti-corrosion coating. The shell can be easily removed and remounted during periodical axle NDT inspection.

## **LURSAK®**

Special coating system that guarantees total protection of the railway axle against corrosion and damage from ballast impact.

## **SAMT** PROBE

Innovative ultrasonic inspection probe for solid axles. The inspection is made from the blind hole designed at the end of the axle, allowing automatic and more reliable inspection of the entire axle in shorter time without the need to disassemble the wheelset from the train.

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| VALUE IN  
**DESIGN**

## **FORGING VALUES IN DESIGN**

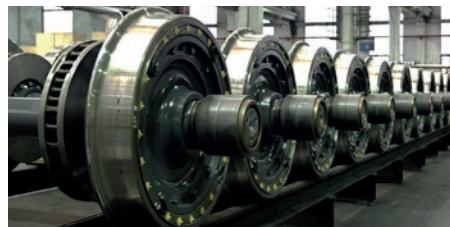
We design customised solutions according to customer needs to improve thermostability, modularity, comfort and reliability.

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## **RESILIENT**WHEEL

Our resilient wheel use modular rubber components that can easily meet customised design requirements, simplifying maintainability and improving comfort. Tyre steel grades are optimized to reduce wear and RCF.



## **LIMOSET**<sup>®</sup>

Innovative portal axle design for low floor LRVs. Total Life Cycle Cost is reduced and its modularity grants easy assembly, disassembly and inspection.



## **SURA**<sup>®</sup>

Thermostable (i.e. "low-stress") wheels designed to limit deformations and internal stresses caused by thermal loads during tread braking.



| VALUE IN  
**SILENCE**

## FORGING VALUES IN SILENCE

Our noise-reduction solutions from the Syope® family are designed to significantly reduce wheel noise emissions, thereby limiting the impact of noise pollution on people and ecosystems.

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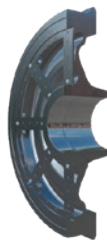


| VALUE IN  
**SILENCE**



### **SYOPE**<sup>®</sup> PANEL

- No modification of the wheel original geometry
- No screws for damper fixing
- Low weight



### **SYOPE**<sup>®</sup> SPOKES

- Reusable
- Easy to assembly
- Able to withstand high temperatures (500°C) caused by excessive braking



### **SYOPE**<sup>®</sup> RING

- No screws for damper fixing
- Low weight
- Cost-effective solution



### **SYOPE**<sup>®</sup> BLOCKS

- Reusable
- Easy to assembly



### **SYOPE**<sup>®</sup> LAYERS

- Reusable
- Easy to assembly



### **SYOPE**<sup>®</sup> BRAW

- No modification of the wheel original geometry
- No screws for damper fixing
- Low weight
- Efficient against curve noise

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| VALUE IN  
**RELIABILITY**

## **FORGING VALUES IN RELIABILITY**

We deliver maintenance solutions that improve asset reliability and reduces capex. We take care of all the stages, from wheel manufacturing to wheelset, bearing inspection facilities and reprofiling services.

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| VALUE IN  
**RELIABILITY**



## TOTAL WHEELSET CARE



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| VALUE IN

**TRACEABILITY**

**FORGING  
VALUES  
IN TRACEABILITY**

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We ensure resiliency  
and reliability of supply.

## SUSTAINABLE AND RESILIENT SUPPLY CHAIN

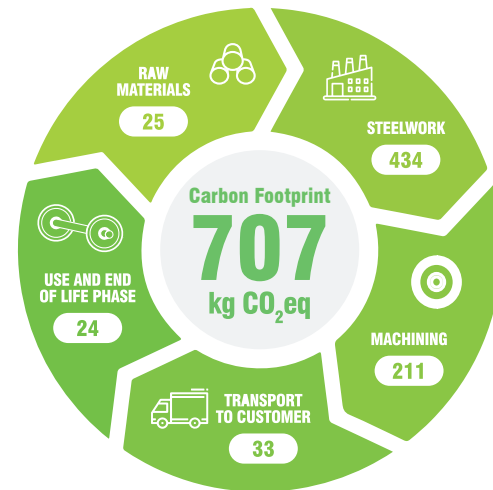


### STARTING AT THE SOURCE. GREEN ID.

The Green ID is a document reporting the Data of the exact Carbon Footprint of a product in accordance with ISO Standard 14067:2018.

### IMPROVING STOCK AVAILABILITY

Creation of local buffer stocks and just-in-time delivery service.



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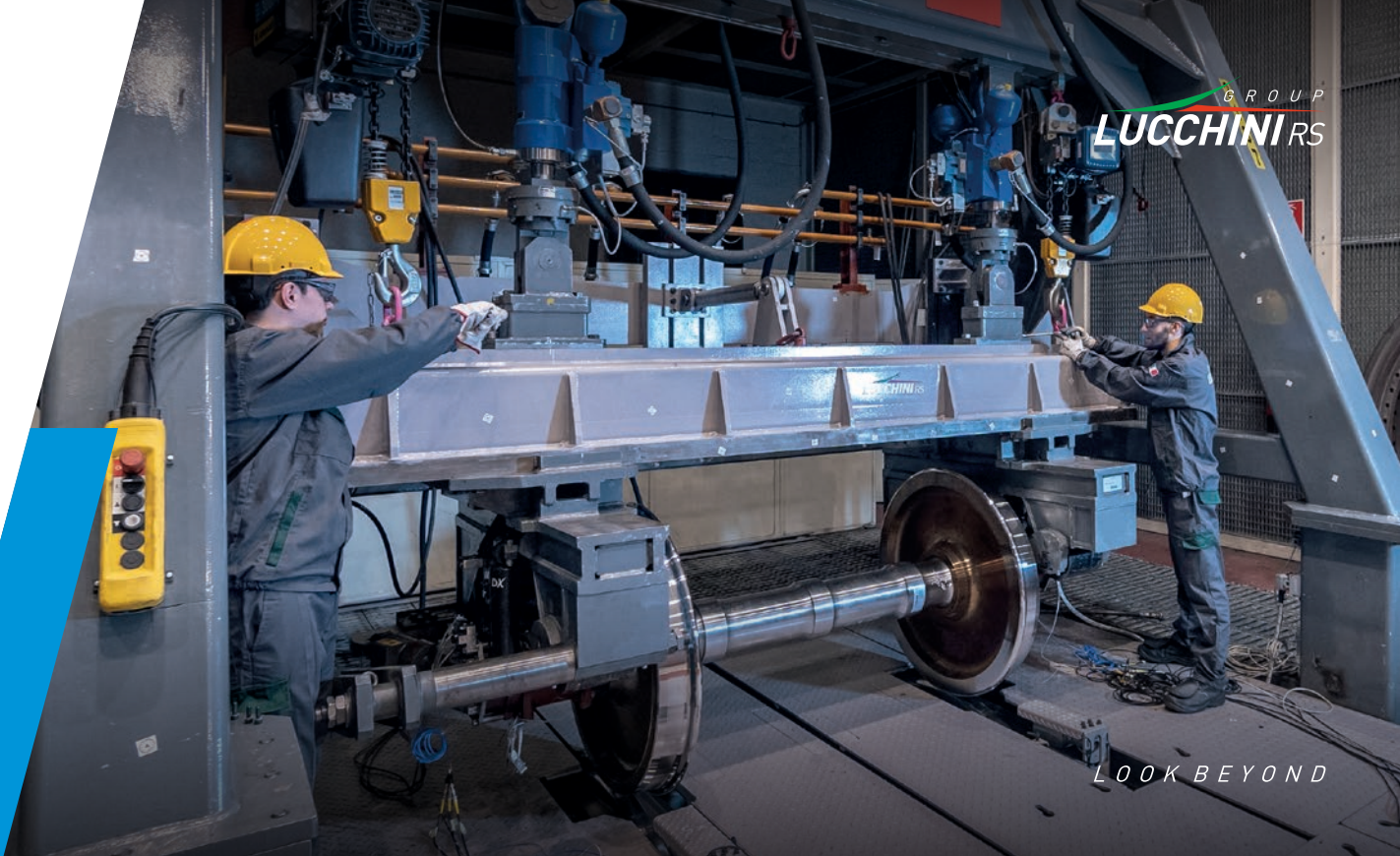
## FORGING VALUES IN TESTING

We deliver expertise  
on product characterisation  
and testing methodologies.

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VALUE IN  
**TESTING**

## TESTING PERFORMANCE

Cutting-edge equipment and knowledgeable staff allow our laboratories to perform metallurgical and metallographic tests, chemical and environmental analyses, as well as mechanical, fracture, dilatometric, corrosion, fatigue and stress tests of wheelsets, axles and wheels.

## FULL-SCALE VALIDATION

- Full-scale fatigue test on wheels and axles
- Crack propagation tests
- Structural tests on wheels
- Residual stress measurements on wheels and axles
- Modal and acoustic tests on wheels

The Lucchini RS R&D laboratory includes a full-scale roller rig "BU300" for railway wheelset. Able to reproduce straight and curving rolling conditions up to a speed of 300 km/h, it is the testing bench with the closest simulation of trains real-life operations.

### **Accreditation:**

UNI CEI EN ISO/IEC 17025.

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## MAIN COMPANY CERTIFICATION

- IRIS
- AAR M-1003
- ISO 14001
- ISO 45001
- ISO 50001
- ISO 9001
- RISAS
- VPI
- ECM EU 2019/779
- ISO 3834-2 + EN 15085-2
- Regulation (UE) 333/2011

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