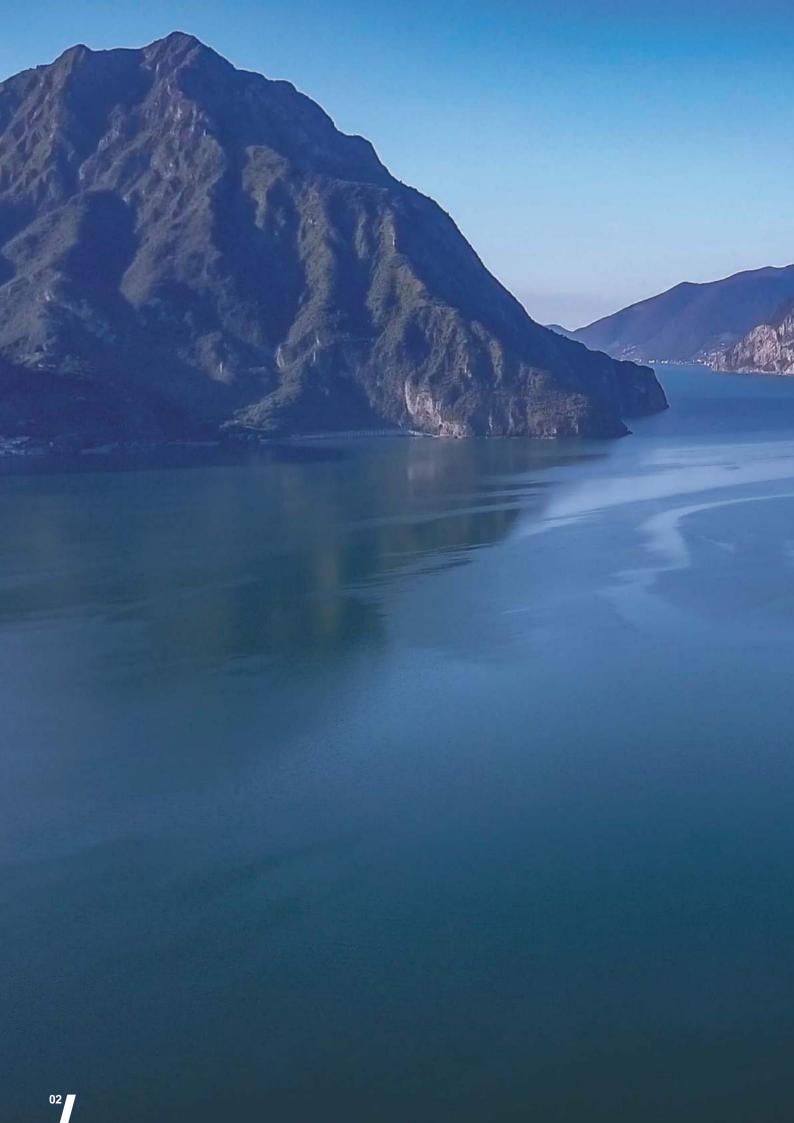




INNOVATING FOR INNOVATORS

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.



Letter by the Chairman

The industrial beginnings of my family are dated back to the first decades of the last century, when my grandfather who lived in one of the beautiful and industrious valleys of Brescia, became a small entrepreneur and started his own business in the field of mechanics and metals.

As a matter of fact, in that period, the nature offered a precious opportunity to the inhabitants of those valleys, that is: without electricity and thanks to rough and simple machinery, the streams, flowing down from the mountains, made engine power available and took advantage of it for the functioning of big steel hammers in order to be able to forge the tools used by farmers every day.

The activity consisted in obtaining pieces of recycled steel. After being heated in small wood and coal ovens, they were forged in a very artisan way to obtain work tools to be sold such as pickaxes, shovels and hoes.

After World War II, the handcrafted activity of my grandfather Giuseppe was taken over by my father Luigi. Thanks to the availability of electricity, he started his business activity with a small workshop that was the first step of what it will be a real industry.

In the 1950s and 1960s, thanks to the post war economic expansion, my father progressively developed the business, acquiring the first rolling mills and then the electric melting furnaces. In the following decades the development became even stronger with the purchase of even modern plants and new factories.

In 1990, from the Italian state shareholdings, my family acquired a historic company, founded in 1856. Its distinctive traits were both its geographical position - on a small peninsula of Lake Iseo in Lovere, in the province of Bergamo - where it was logistically developed, and for the distinctive feature of its production (wheels and railway axles, as well as customized cast and forged products), very different from the typical ones of our Group, which consisted of steel rods, bars, billets and wire rods.

In 2007, in an increasingly evolving iron and steel context, we decided to change the main industrial activity in Lovere, moving from a generically iron and steel production to a specific one, focused on the railway market with high-quality customized products, characterized by a continuous Research & Development and by an increasingly advanced level of customer service.

The year 2008 was the beginning of a new phase for our industrial history, thanks to an important development program which provided huge investments in order to have a higher quality and technical level of the manufactured railway products.

So, a new rolling line for railway wheels was built as well as all the equipment used to complete the product both upstream and downstream.

Along with the start-up of the new plants, the year 2010 marked the beginning of a new development characterized by high quality products allocated to new and more important markets.

This is how Lucchini RS has established itself as a worldwide leader in the engineering and production of rolling and forged railway products with high performance and quality standards.



Our main markets are Europe, in which we provide all the high range of solutions related to our reference products, and China, where today we are leading provider (around 80% of the market share) of wheels and axles for the High-Speed (over 60% of the worldwide AV network is in China).

After the acquisition of Mamé Forge in the forging and casting division, another important phase started with the goal of homogeneity and synergy of the two divisions in order to achieve an optimal industrial structure which is leading the Group in the key sectors with a specific know-how.

But the development and results of this decade are due above all to the human and professional value of all our resources. With knowledge, sense of belonging and passion, they let the company achieve important milestones in Italy and in the World.

The Lucchini RS Group management consists of high-level international professionalism in the respective fields of competence. One of the greatest strengths of our Group is the union of a strong and solid manager team, resulting from the fourth generation's debut of the Lucchini family, which operates with great determination, ability and enthusiasm.

In recent years we have achieved important results: last turnover is very close to the threshold of half a billion Euro. It seems a lot for a medium/small company, still little for a large one. We can define our family-owned company a typical case-history of the Italian business.

Our strength lies in a strong specific know-how which is tangible in excellent products, in competitive production lines, in expert and motivated human resources, in high-level R&D and in a widespread industrial corporate network in the world's major markets: England, Sweden, Poland, China, India, Belgium, Austria, South Africa and the United States of America. The goals fixed in 2008 have been largely achieved; today we are working keenly for a new phase, focusing on other ambitious goals, in order to maintain and to mainly improve our position and, at the same time, to protect ourselves against increasingly aggressive and strong global competitors.

The key points of our future development are the digitalization, the ever-increasing automation, the streamlining of business processes, the even more attention to solutions for the market rather than the simple specific products.

All of this in the framework of social, environmental and financial sustainability, which are the key points of our people's development skills. Surrounded by a stimulating and meritocratic climate, men and women can work in a peaceful and fruitful way.

Juli



Giuseppe Lucchini



The Company grows and develops. Since 1856.

S.



1856

G. Andrea Gregorini moved his company, together with the manpower, from Vezza d'Oglio to Lovere and established a company for steel, casting and forging production.

1907

Lovere plant sets up the production of railway wheels and axles on a large scale.

1930-1987

Changes of ownership between state-owned companies: ILVA, Italsider, Terni Group and finally Lovere Sidermeccanica.

1990

In the frame of reorganization plan for state-owned steel mills, Lovere Sidermeccanica is privatised and acquired by Lucchini Group.

2000

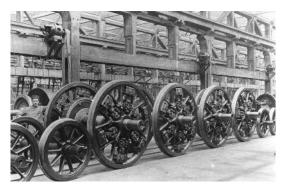
The European expansion starts with the foundation of Lucchini UK, Lucchini Sweden and Lucchini Poland.

2007

Sinpar Spa (Lucchini Family) acquired 100% of Lovere Sidermeccanica from Lucchini Spa.

















2008

A massive investment plan is launched to upgrade and modernize the Lovere site with the objective of delivering high quality railway components. The new company name and logo are changed to Lucchini RS. "RS" stands for Rolling Stock.

2010

The worldwide expansion continues: Lucchini Beijing and Lucchini India. New rolling mill for train wheels started up.

2012

New important investment for an automatic axle machining line, wheel machining center, automatic axle forging line, heat treatment facility for heavy forged / cast components (150t).

2014-2015

European strategy Expansion does not stop: LBX in Belgium, Lucchini Central Europe in Austria. Lucchini Mamé Forge born of an agreement between Mamé Group and Lucchini RS.

2016

Lucchini South Africa is established in Johannesburg.

2017

Lucchini Tool Steel and Lucchini NA are established, in Italy and North America, respectively.

2018

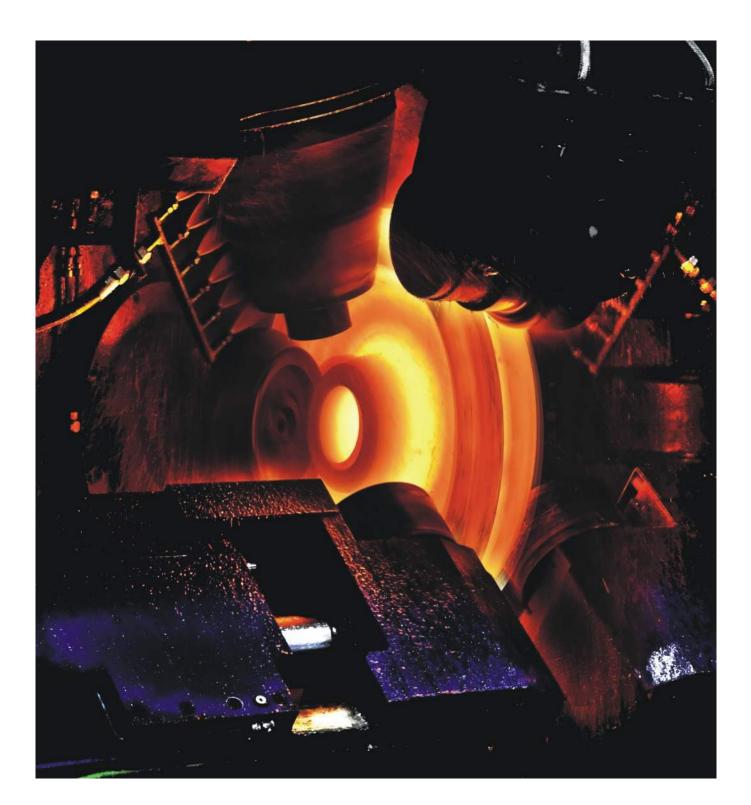
Lucchini Industries is established in Italy with the obejctive to increase flexibility and reactivy of the industrial organizational structure.







Lucchini RS Group today.



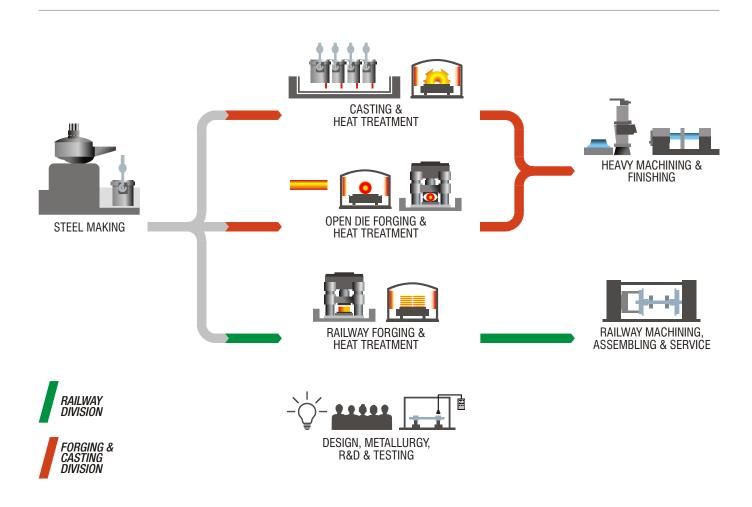


Lucchini RS is an international Group, specialized in design and production of high-tech steel products, meeting the global demand thanks to its subsidiary companies placed in the global key markets.

The distinctive feature of the Group lies in its integrated production line: from the manufacturing of steel, to design of materials and finally to the finished products, Lucchini RS Group strives to be a "one-stop shop".

Due to important investments in modern machines, today Lucchini RS Group is provided with the most advanced technologies which allow to offer innovative and very high-quality products.

In order to anticipate the markets' requests, the company is always committed to research for new materials and innovative products. Moreover, the employees play a vital role in the industrial result and company sustainability. Their professional and personal contributions are the engine of the success of the Group.



The core business of the Group is identified with two divisions:

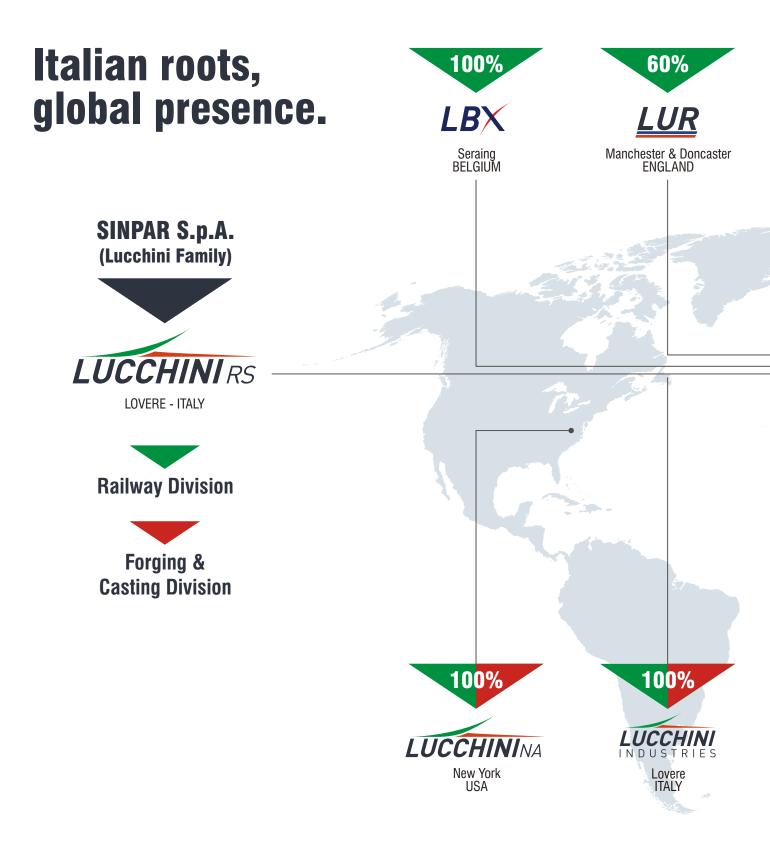
Railway Division

Manufacturing of rolling stocks as wheels, tyres, axles and wheelsets for a wide range of applications, from High-speed to urban transport systems.

Forging & Casting Division

Manufacturing of forging to drawing and casting for industrial sectors. Moreover, Lucchini RS Group also produces a large variety of tool steel grades for plastic moulding, pressure die-casting and extrusion.



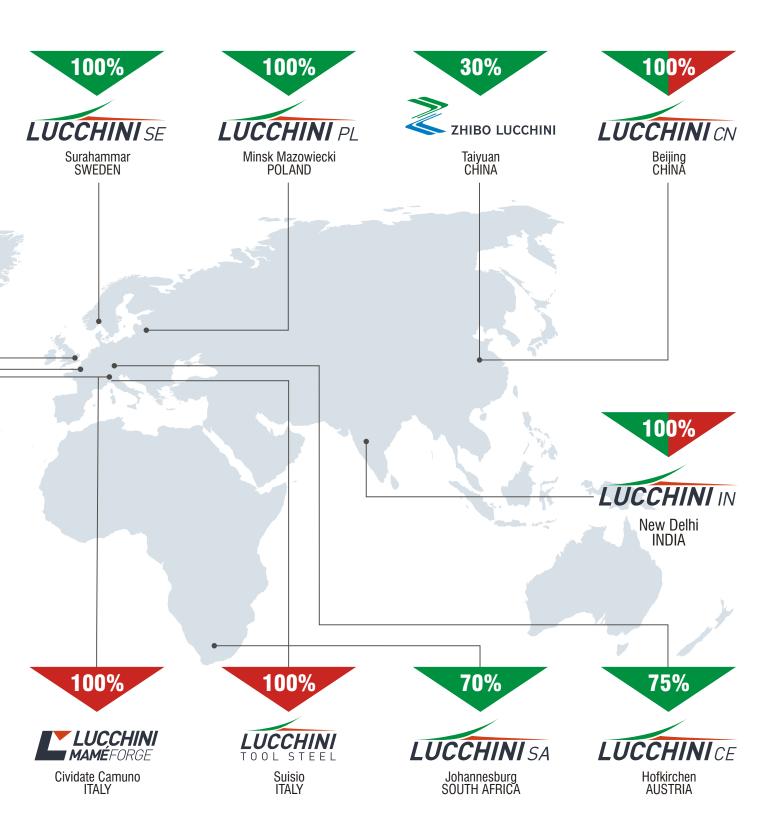


The strategy to improve the production lines and, at the same time, the international expansion plan have allowed the Group to have a wide industrial network and a local presence in some key markets.

Since 2007, Lucchini Group has expanded its sales network and has built up its presence in the international markets establishing companies in India, China, Austria, Belgium, South Africa and in the US, which have come to flank the facilities already in operation since the turn of the century in the UK, Sweden and Poland.

The Forging & Casting Division acquired two new companies in Italy: Lucchini Mamé Forge, producing steel forgings up to 40 tons in weight by means of extremely modern and efficient systems, and





Lucchini Tool Steel, a leader in Italy in the finishing, sale and distribution of moulds and tool steel.

In this manner, the Group enriched, supplemented and improved its product range, taking full advantage of experience and the synergistic effects obtained by joining forces with other industrial realities.

In this context, the international expansion plan together

with the "1 Company" project (launched in July 2015 to foster a climate of sharing and continuous improvement within Lucchini RS Group) pursue the ambitious aim of increasing the competitiveness of Lucchini RS Group thanks to product quality, high production capacity and internal synergy.





Lucchini Industries which is entirely controlled by Lucchini RS S.p.A., is the manufacturing and industrial department of the Italian Lovere plant.



Lucchini Poland (LPL), located on route of international railway Berlin–Warsaw–Moscow line, offers a wide range of railway components and services for freight and passenger vehicles, including design of customized and innovative wheelsets.



Lucchini Sweden (LSE), located in Surahammar, has a long tradition in the production of railway wheels, axles and complete wheelsets.

It is the only manufacturer in Scandinavia.



Lucchini Beijing (LCN) is a commercial subsidiary, established to improve the Group's presence in the Chinese and Asian market for rolling stock, castings, forgings and tool steels.

The company also coordinates after sales and customer technical services directly on site.









Lucchini North America, Inc. is a corporation fully owned by Lucchini RS Group. The company is targeted to the railway sector and will makes available on the American market the Lucchini RS wide range of products for wheels, axles and wheelsets with relevant advanced solutions (special steel grades, low noise wheels, anti-ballast coatings, etc.).



Lucchini India (LIN) is wholly owned by Lucchini RS Group. Since India is a strategic market for rolling stock, the addition of this company to the Lucchini RS Group is increasing its network of foreign subsidiaries and its global presence.



Lucchini Central Europe (LCE) is a Joint-Venture between Lucchini RS and SMW Metallverarbeitung located in Hofkirchen an der Trattnach, in the north western part of Austria. It is specialized in the machining of solid wheels with complex geometry for High-Speed, EMU railways and transit systems.



Lucchini South Africa (LSA), situated in Johannesburg, is specialised in the machining of wheels, and the marketing of wheels, axles and wheelsets, for the Southern Africa rail market.





Zhibo Lucchini Railway Equipment CO., registered as a Sino-Italian Joint Venture in October 2007, is a high-tech company that specializes in wheelset machining, assembly and overhaul. Besides, Zhibo Lucchini has set up its satellite wheelset maintenance stations and its current annual capacity is 50,000 wheelsets including both new wheelsets and maintenance wheelsets.



Lucchini Unipart Rail (LUR) is the joint venture created by the merger of Lucchini UK Limited of Manchester, with the wheelset and bogie overhaul activities of Unipart Rail Limited, based in Doncaster.

LBX

LBX, located in Seraing, close to Liege in Belgium, is specialised in the machining of solid wheels and axles and the assembly of complete wheelsets for freight, heavy rail, mass transit and light rail.









Lucchini Mamé Forge operates worldwide in the steel forgings business.

The company entered Lucchini RS Group in 2015, when it was acquired from Mamé family.

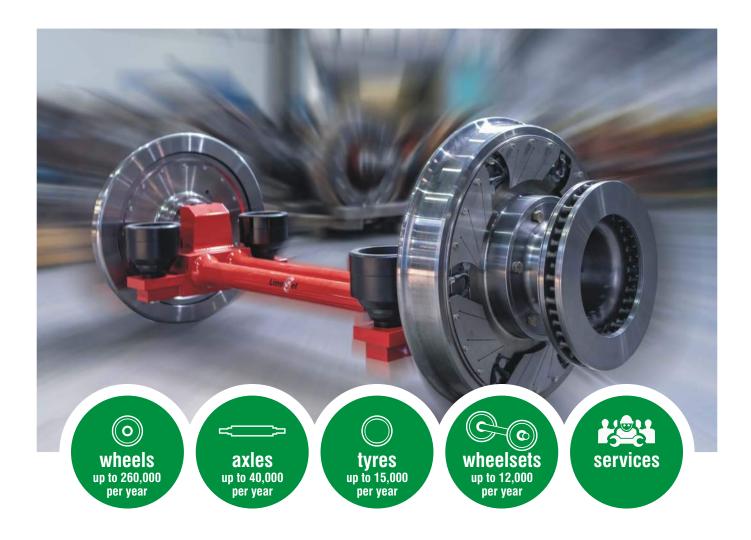


Lucchini Tool Steel - The open-die-forging production is focused on the tool steels business, for plastic moulds, hot-work and die casting application.

Thanks to the strong partnership with distributors and service centers, Lucchini RS Group reaches the most important mould and tool steels markets all over the world.



Products.





Due to its long experience in the field of railway, Lucchini RS Group can provide all type of wheels, tyres, axles and wheelsets (completed of axle boxes, bearings, brake discs and drive units). Starting from the selection of special steel grade for rolling stock to the product design definition and after sale services,

Lucchini RS Group aims at satisfying all kinds of customer's requests and applications.

Lucchini RS Group provides an integrated maintenance approach: wheels replacement, overhaul of axles, axleboxes and bearings, drive units, brake discs and bogies. The company can also monitor performance of wheelsets in service with the objective to optimize Life Cycle Cost.



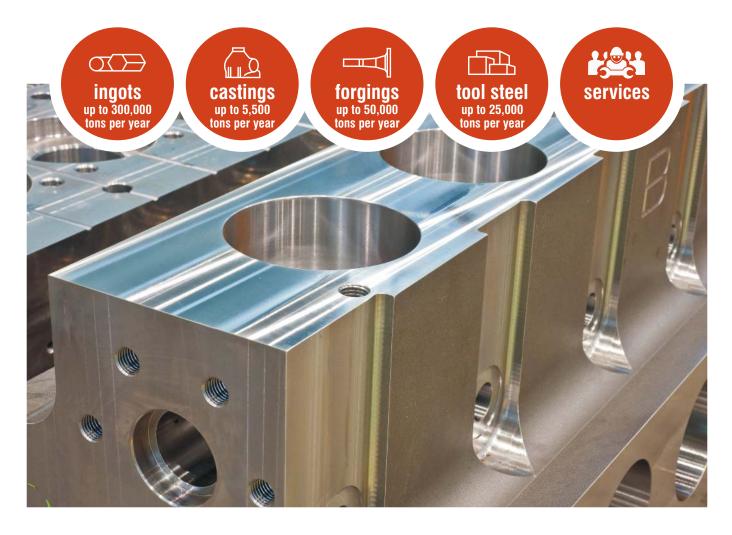
Lucchini RS Group makes a full range of forgings to drawing up to 35 tons for all industrial sectors, including energy, oil and gas, plant engineering, shipbuilding, offshore facilities and cement works. It produces also a wide range of tool steels used in the sector of moulds for plastic materials and in the sector of hot working of ferrous and not ferrous materials such as extrusion, moulding, diecasting and gravity diecasting.



The Group boasts one of the biggest foundries in Europe in terms of weight, size, technical complexity and quality of the steel castings. A total molten steel capacity of 300 tons, a robustly and well-dimensioned handling system and large moulding pits make possible the production of castings up to 150 tons in weight.

Castings and forgings can be supplied rough rolled, finished or ready assembled as a forging/casting subassembly.

From Finite Element Analysis (FEA), forging and casting simulation to further operation like mechanical and welding assembly, cladding and surface treatment: with its services, Lucchini RS Group offers customer-oriented solutions.





Applications.



RAILWAY

Railway solutions by Lucchini RS equip High-Speed, passenger and freight trains fleets, guaranteeing reliability and reducing fleet management costs. The company has different references for every type of train applications: passenger EMU/DMU, coaches, freight wagons and light rail vehicles.

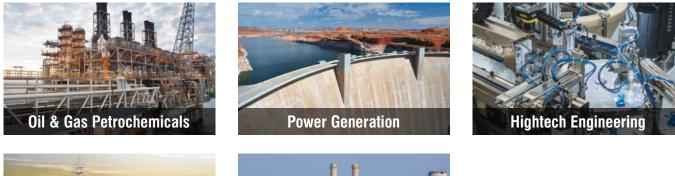


Freight



FORGING & CASTING

Cast and forged products by Lucchini RS Group equip the most advanced cruising ships, the off-shore platforms in the North Sea, major industrial facilities and the most highly sophisticated power plants.

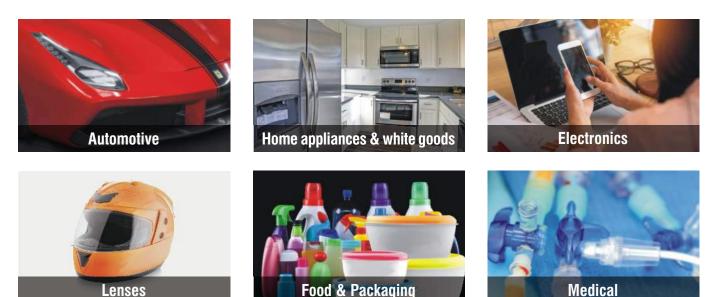






TOOL STEEL

Special steel grades makes mould plastic materials and form metals, wich are used in most different sectors (automotive, household appliances, furniture, optical, medical and building sectors, food packaging, etc.).



Lenses

Food & Packaging

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Lucchini RS, a human dimension, a digital mindset.



Qualified, motived and enthusiastic employees are the foundation and the engine of Lucchini RS success.

The unique strength of the company is the ability to combine the industrial domain segments expertise with the understanding and appreciation of local needs. Therefore, 2,500 employees from more than 10 countries work together to serve customers.

Lucchini RS offers talent management programs and internal mobility schemes to help develop future leaders in the company.

Our training programs encompass both professional skills such as leadership skills, technical skills and personal skills such as personal excellence or time management.





As a part of digital transformation, modern information and communication technologies merge with industrial processes. In order to prepare people appropriately for a changing production landscape, we integrated new digital work contents into the training for the employees.

Proactive approach, incentives and rewards of good practices, increase of the involvement of all people, especially the blue-collar workers.

We endeavor to offer our employees, who meet our high demands, challenging tasks, individual development opportunities and an attractive workplace.

Lucchini RS sees digital transformation as a way of constantly creating value, which improves access to energy, ensures the safety of our plants and workers, strengthens our economic and operational performance and speeds up operating and decision-making processes, all of which will become ever more data-driven in the future.

Recently, the process has seen the implementation of modern and standardized IT tools: SAP Leonardo and Microsoft 365 followed by different manufacturing execution system (MES).

The IT department creates a solid and coherent IT Group infrastructure that help to extend the HQ Digital Projects to all subsidiaries.





Research and Development.



Lucchini RS puts great emphasis on research and development, in order to conform to the most recent technological innovations and to anticipate our customers' needs.

Lucchini RS has a metallurgy laboratory, a chemistry laboratory, a technological laboratory and a high-tech laboratory. They perform a range of tests, including mechanical property tests, chemical and environmental analyses, metallographic, macrographic and micrographic tests using optical and electronic microscopes, dilatometric tests and corrosion tests.

Lucchini RS R&D Centre carries out research and development programs that ensure and support its companies' constant improvement.

The research activities can be shared in three categories:

- Optimization of manufacturing processes to ensure that products and materials are more and more safe and reliable;
- Design and industrialization of special steels and new products mainly in the railway sector;
- Spreading of studies on the most advanced technologies.

Lucchini RS collaborates with different universities. For example, the partnership between Lucchini RS and Politecnico of Milano allows to enhance research & development in a wide-ranging (chemistry, information technology, economics and mechanical engineering), to strengthen training and talent scouting.



Lucchini RS is the only producer that has its own machinery to carry out full scale tests which allow its products to be complied with the most restrictive safety conditions.

These tests are important also for new studies, focusing in particular on the issue of wheel-rail contact.

Tests on wheels, axles and wheelsets are carried out on full scale test rigs, certified by EBA, under conditions that reproduce those findings in the real environment.







Drive new way with Lucchini RS.

Megatrends such us urbanization, population growth, globalization, and increasing environmental awareness and the careful use of resources also require new solutions and supply concepts.

The industry will also undergo transformation at the hands of digitalization, automation, artificial intelligence, e-mobility, cyber security, innovative financing models.

Lucchini RS develops solutions that improve the future of mobility and industry.





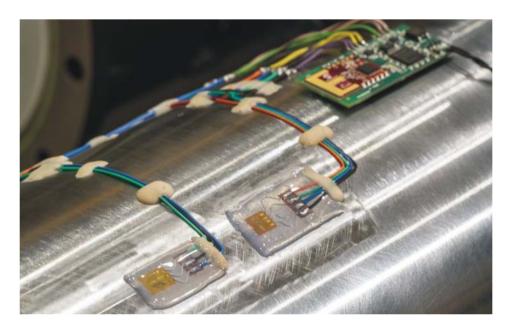


Continuous monitoring of the data.

Lucchini RS is bringing new capabilities and value to its customers by investing in the development and integration of electronic solutions and software.

These are used to connect systems and things to predict maintenance and optimize design.

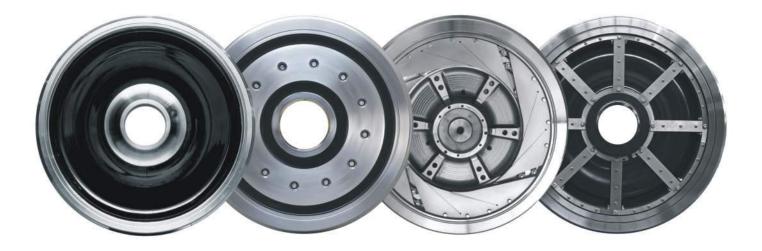
The SMARTSET® is a customized telemetry system that measures and processes real-time strains of the axle, obtaining bending and torsional load spectra.



The data can be collected on board and up-loaded to a remote server in which then, it will be available for optimizing Maintenance inspection interval in relation to the actual vehicle service, enabling the reduction of maintenance costs and detection of damage positions related to the infrastructure.



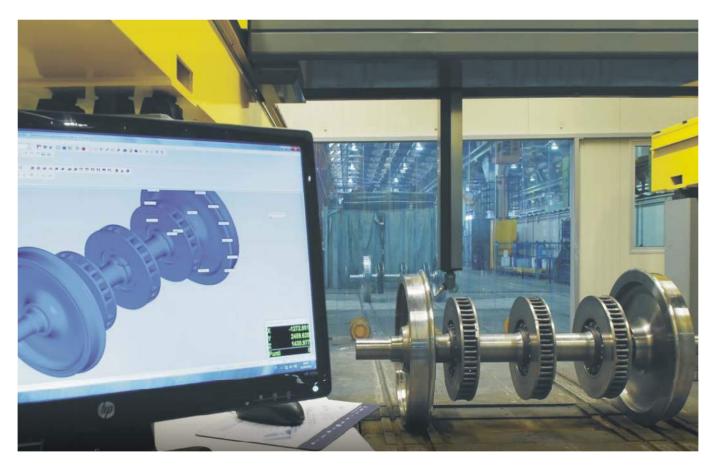
Reducing Noise Emission.



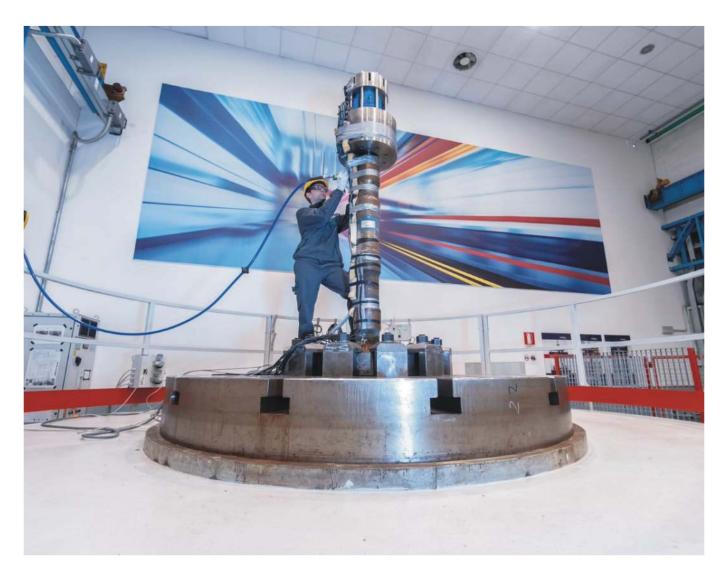
Noise abatement in railway is regulated in Europe and in many others countries. Lucchini RS has different patented solution with vibration-damping system: from High-Speed trains (Syope®) to freight transport (Hypno®) and urban transport (Galene®).

The company is using digital tool for predicting wheel-rail noise emission.

The STARDAMP software enables to estimate the sound emission from the wheel and from the track; in addition to the comparison of a new wheel with a reference wheel.







Design to cost solutions and total product life cycle cost analysis.

Lucchini RS' design-to-cost philosophy simplifies assembly, disassembly and Non destructive test inspection activities. LimoSet® is an innovative low floor portal axle for urban application 30% lighter than existing solutions and a reduction of the total life cycle cost of 15-20% less than existing solutions.

Moreover, in collaboration with Politecnico di Milano University, the company have developed, a crack propagation software called STARCRAK.

This digital tool enables to calculates the crack propagation (km) from an initial small crack with the objective to provide an innovative service to the customer in identifying optimal inspection intervals.



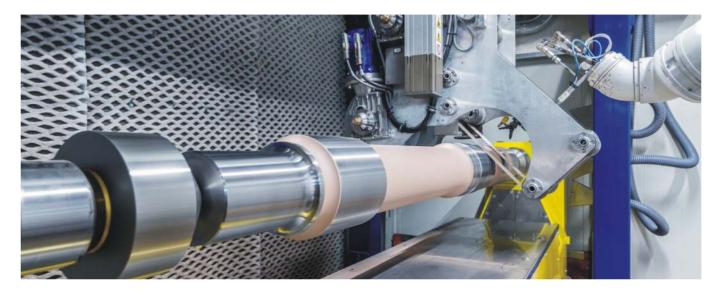
Increasing Safety Factors.



Integrity, performance and durability: these the imperative characteristics of the rolling stock.

Lucchini RS SURA® wheel is a versatile wheel solution with positive service feedback that has an easily adaptable design for different applications such as freight, non-freight railway vehicles and even for High Speed trains. The special curved S shape provides an optimal stiffness that limits as much as possible the lateral rim displacements and the rim residual stresses induced from severe tread braking. This patented solution for tread- braked wheels increase safety, service and noise emission abatement.

The company is moving also toward innovative and compliance with the new standards axle protection system. Lursak[®], for instance, prevents micro fracture and protects the axles surface against corrosion and impacts in a large range of temperatures.





Developing new performance materials.

The integrated production approach allows Lucchini RS to improve existing steel grades as well as to design innovative materials; special steels for critical use have been the traditional flagship products for LRS, so much so that LRS is very well known for its special steel grades which are developed with special chemical compositions and processing procedures, for a better performance especially in case of extreme environmental working conditions.

Lucchini RS special steel grades allow to achieve superior performances in railway applications (SuperLos[®] for high speed, ArcticLos[®] for cold climates, SandLos[®] for desert), hydraulic fracking sector (Fortius[®] for longer-lasting fracking fluid ends) and tool steel application (Keylos[®] for plastic moulding, Beylos[®] for hot forging and metal extrusion, Kraylos[®] for cast frames for light alloys die-casting moulds, Eskylos[®] for plastic moulding and light alloys die-casting.)







Lucchini RS culture of technology.

Thanks to the constant technological evolution that distinguishes the Group, since 2008 Lucchini RS has been pubblishing once a year a technical-scientific book which is a tangible example of the experience in the specific field of its activity, dealing with highly relevant topics for the sustainable progress of mobility and industry.









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Sustainability: Lucchini RS this is us.

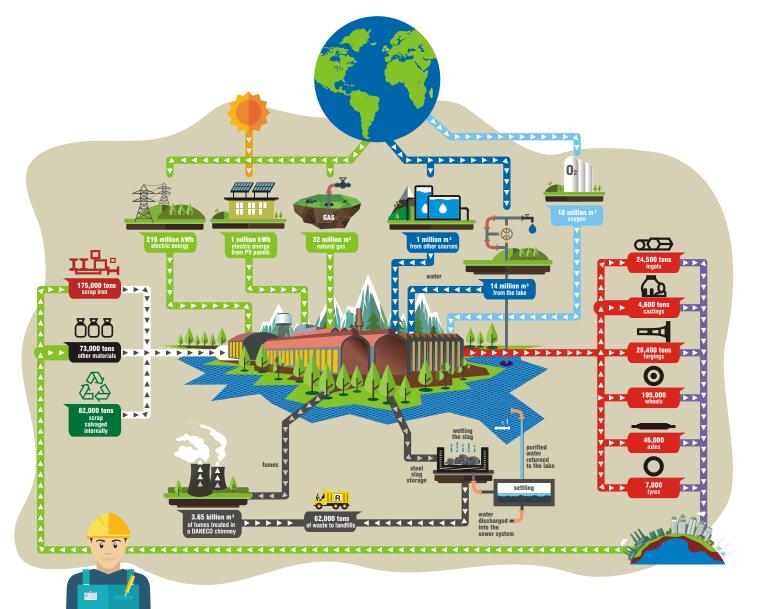


Lucchini RS sets clear-cut goals in terms of sustainability and continuous improvement in the areas of economic results, impact on the environment and social repercussions. This translates into clearly defined actions and objective indicators that help the Group to assess the efficacy of the defined priorities.

Certainly the two centuries are the most tangible proof of the company sustainability, but it cannot be deemed sufficient to guarantee an equally positive future.

For this reason, there are clear objectives for the future:

- Greater safety in the workplace, with the view aim to eliminate all accidents of any nature, ensuring healthy working conditions, in a milieu made of motivation, impartiality fair, tolerance and non-discrimination.
- Protection of the environment, both the local environment and the global environment where all people live, by making choices designed to reduce waste, in terms of economic, environmental and energy resources
- Continuous improvement of production technologies and the qualification of personnel, seeking and developing excellence, rewarding merit, valuing the capacity to innovate and encouraging cohesion and team spirit.
- Carrying on our strategy of internationalisation, designed to strengthen the entire Group through the creation of a vast, solid, tightly-nit and wellbalanced network of companies that share the same values and collaborate, helping one another to improve.



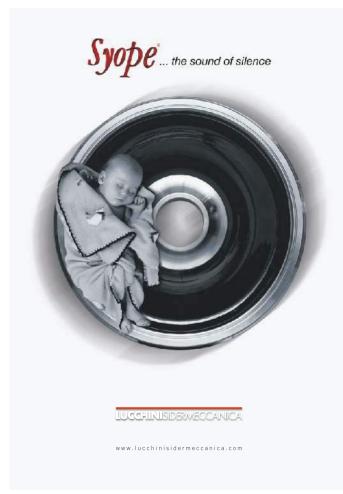


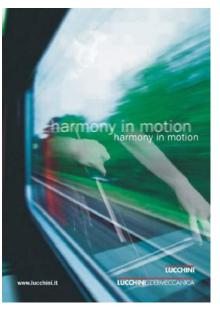
Communication



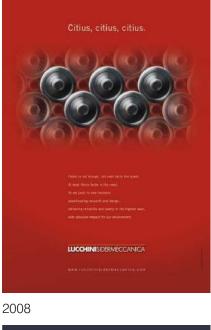
RAILWAY GAZETTE CHINESE EDITION 定の日本 で

2006





2006





2007

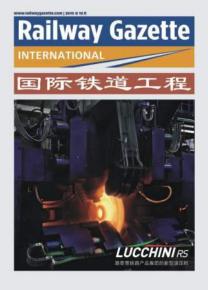






Lucchini RS Travelling on tiptoe.

Lucchini RS: Research and Design, Reliability and Safety, Protecting the environment; Safeguarding its clients. The very best possible today; The immense pleasure of travelling swiftly into the future in unheard of silence.



www.LucchiniRS.it

2009





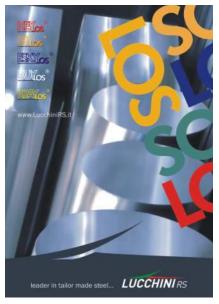
2010

2013



Communication











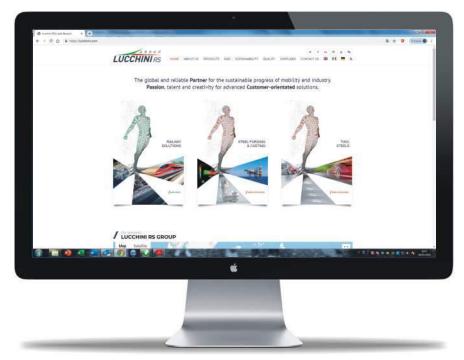


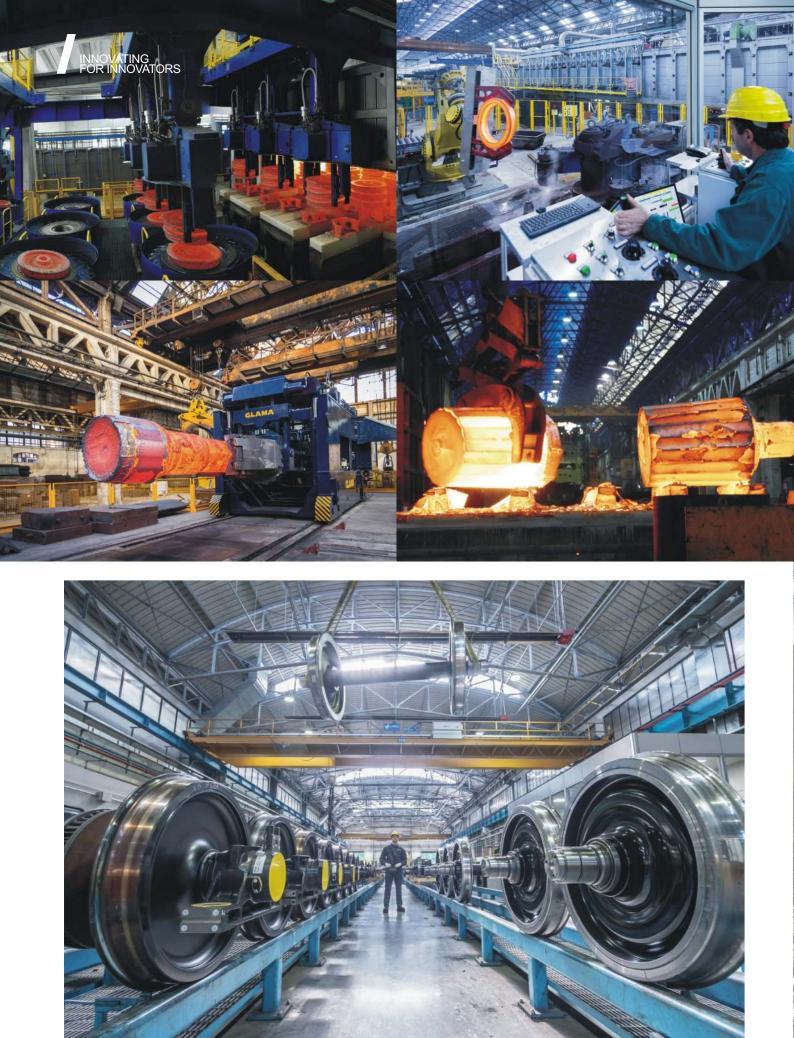


















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