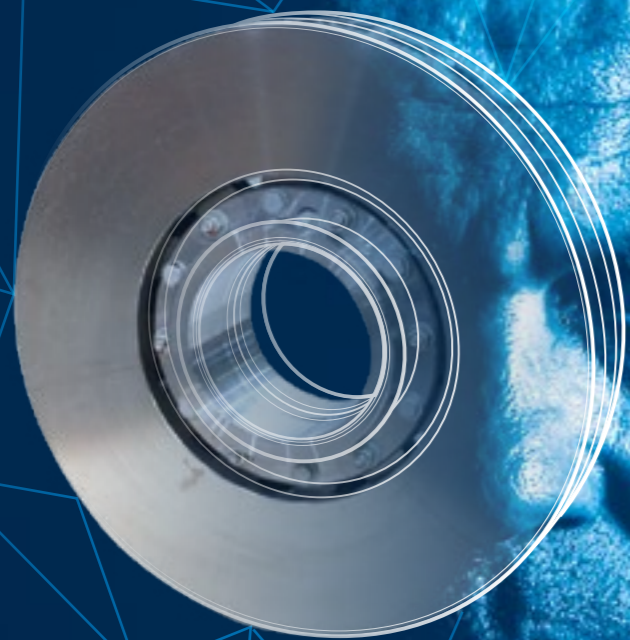




Kovis Group



>40
years

KOVIS

Production of brake discs for all types of railway vehicles and the largest manufacturer of axle boxes for freight wagons in Europe.

Brezina 102, SI-8250 Brežice
Tel.: +386 7 499 11 80
E-mail: info@kovis-group.com
www.kovis-group.com/kovis



KOVIS LIVARNA

Production of high-quality castings made of grey and ductile cast iron.

Železarska 3, SI-3220 Štore
Tel.: +386 (0) 3 780 56 00
E-mail: info@kl.kovis-group.com
www.kovis-group.com/kl

KOVIS TRANSPORTI

Logistic services, internal / external transport

Železarska 3, SI-3220 Štore
Tel.: +386 3 78 05 612
E-mail: info@kl.kovis-group.com
<http://www.kovis-group.com/kl>

KOVIS BP

Quality machining and final production of axle boxes for freight wagons.

Industrijska zona bb
SRB-21400 Bačka Palanka
Tel.: +381 21 754 186
E-mail: info@bp.kovis-group.com
www.kovis-group.com

KOVIS GROUP is an internationally innovative company for the development and production of components for the railway industry and various parts for other industrial sectors.

With more than 40 years of tradition, KOVIS GROUP today is composed of four companies. KOVIS has established itself internationally with the production of brake discs for all types of railway vehicles: from locomotives, trams, and metro lines to high-speed trains.

In addition to the brake discs, Kovis is also the largest manufacturer of axle boxes for freight wagons in Europe.

Beside the parent company, KOVIS GROUP includes also KOVIS LIVARNA, which also produces high quality castings made of ductile and grey cast iron, KOVIS BP, where quality machining and final production of bearing housings for freight wagons is done and KOVIS TRANSPORTI, which provides logistical services and internal / external transport.

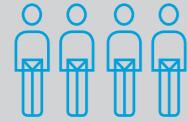
Good Ideas Create Future



Quality, flexibility, self-sufficiency, custom made, competence, extensive knowledge of processing and foundry, long experience, innovative approach, use of modern technologies and equipment enable us to provide our customers with highly demanding technological solutions, flexibility and high

quality, short delivery times, which are at the same time our key competitive advantages. Development and innovativeness design our pace and open an increasing number of new business opportunities, therefore we operate according to the slogan – **good ideas create the future.**

Achievements of the Company



The entire group employs about **450** people.



About **200** active customers



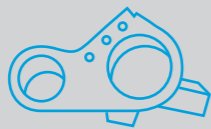
Kovis® brand name



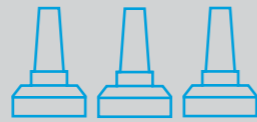
13,000 tons of castings annually



More than **550** different types of brake discs have been developed



More than **120** different types of axle boxes have been developed



Own production for castings and own automatic line for painting



More than **40** CNC machines



Innovative. Different. Excellent.



Developmental. Original. Global.

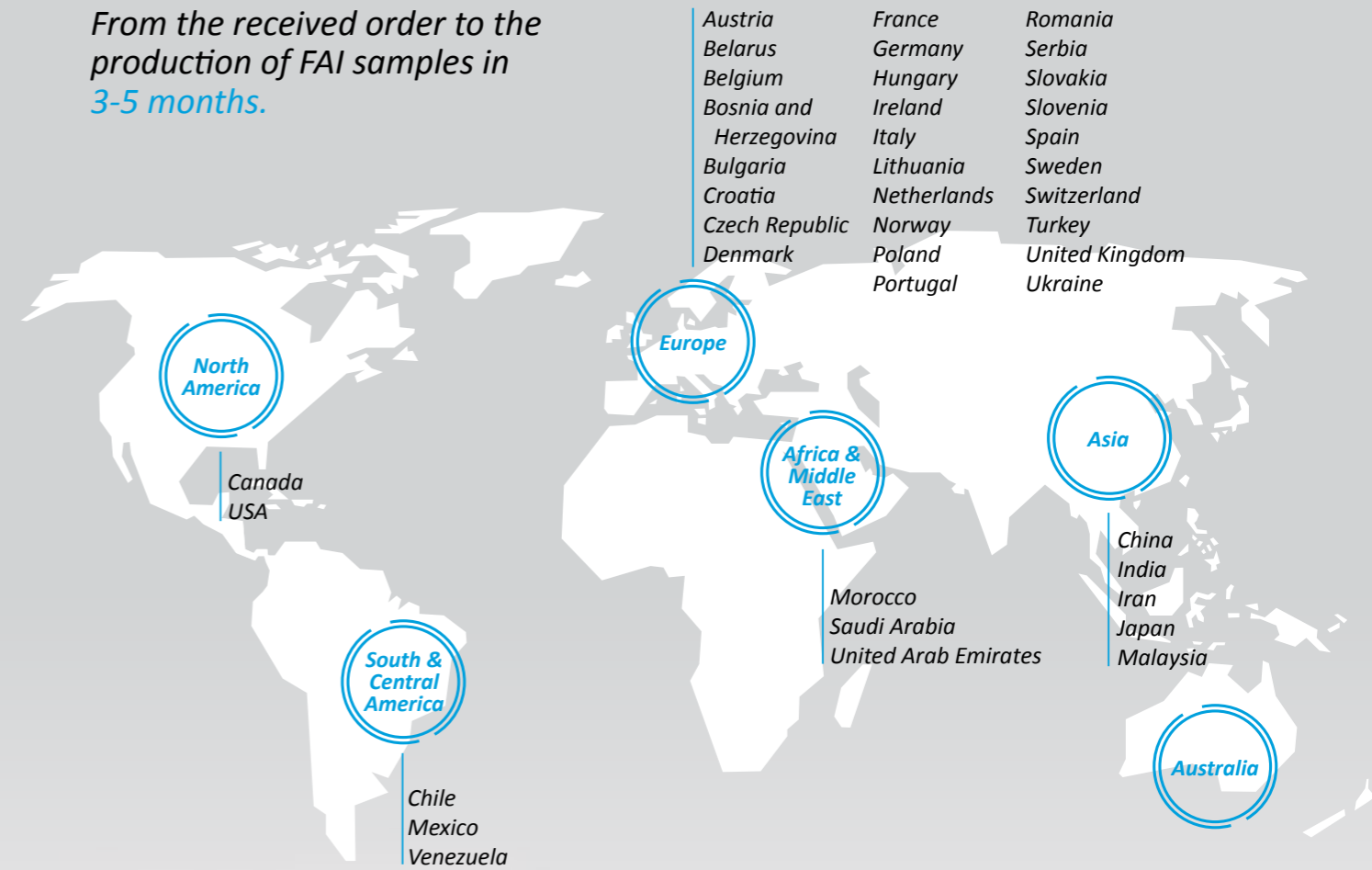


Professional. Quality. Successful.

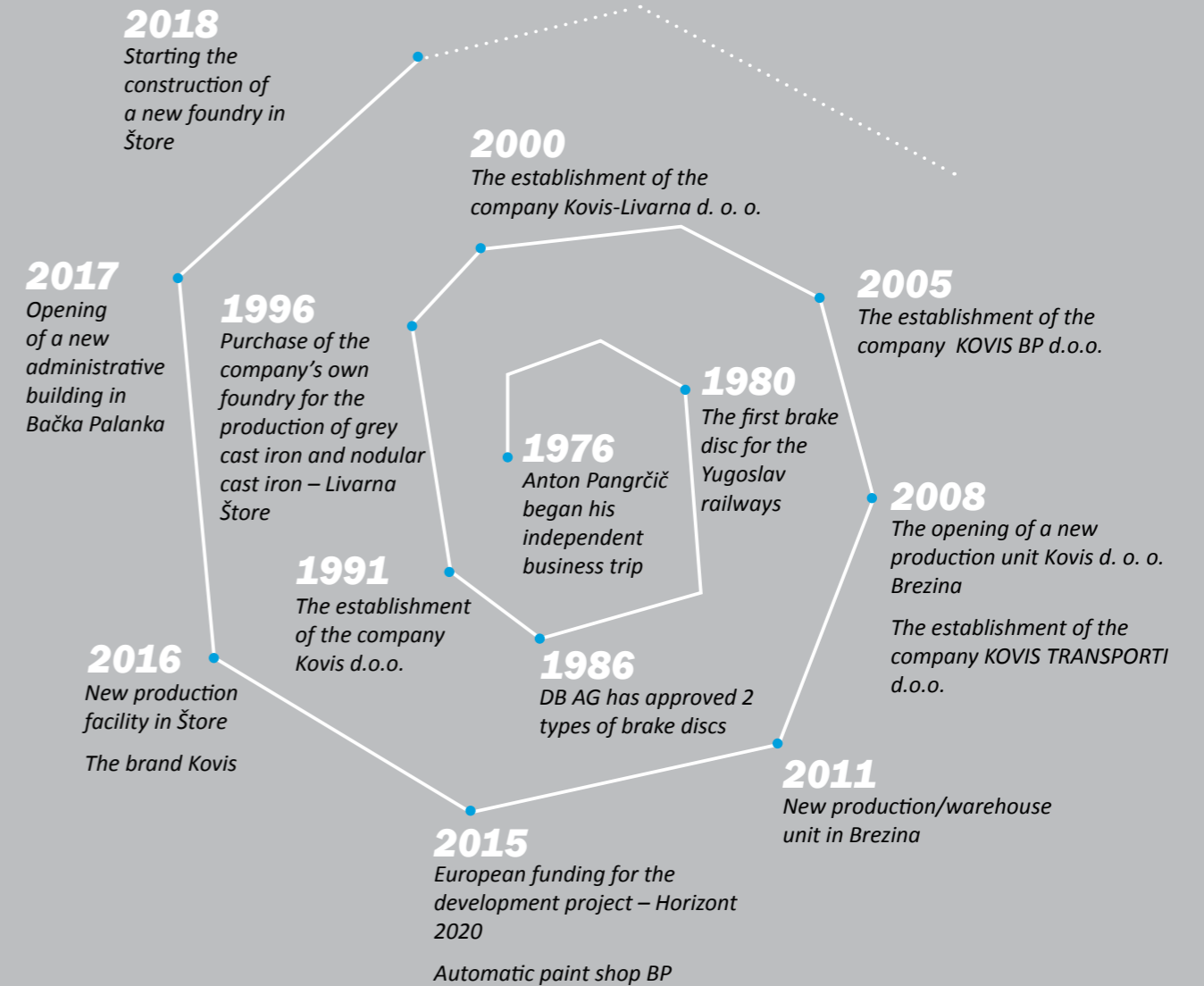
The company continuously invests in development, technical and technological equipment, renews and upgrades the machine park infrastructure and people. This allows the development of new brake discs, axle boxes, other components for railway vehicles and products from other industrial sectors.

Where are We Present

From the received order to the production of FAI samples in **3-5 months.**



History

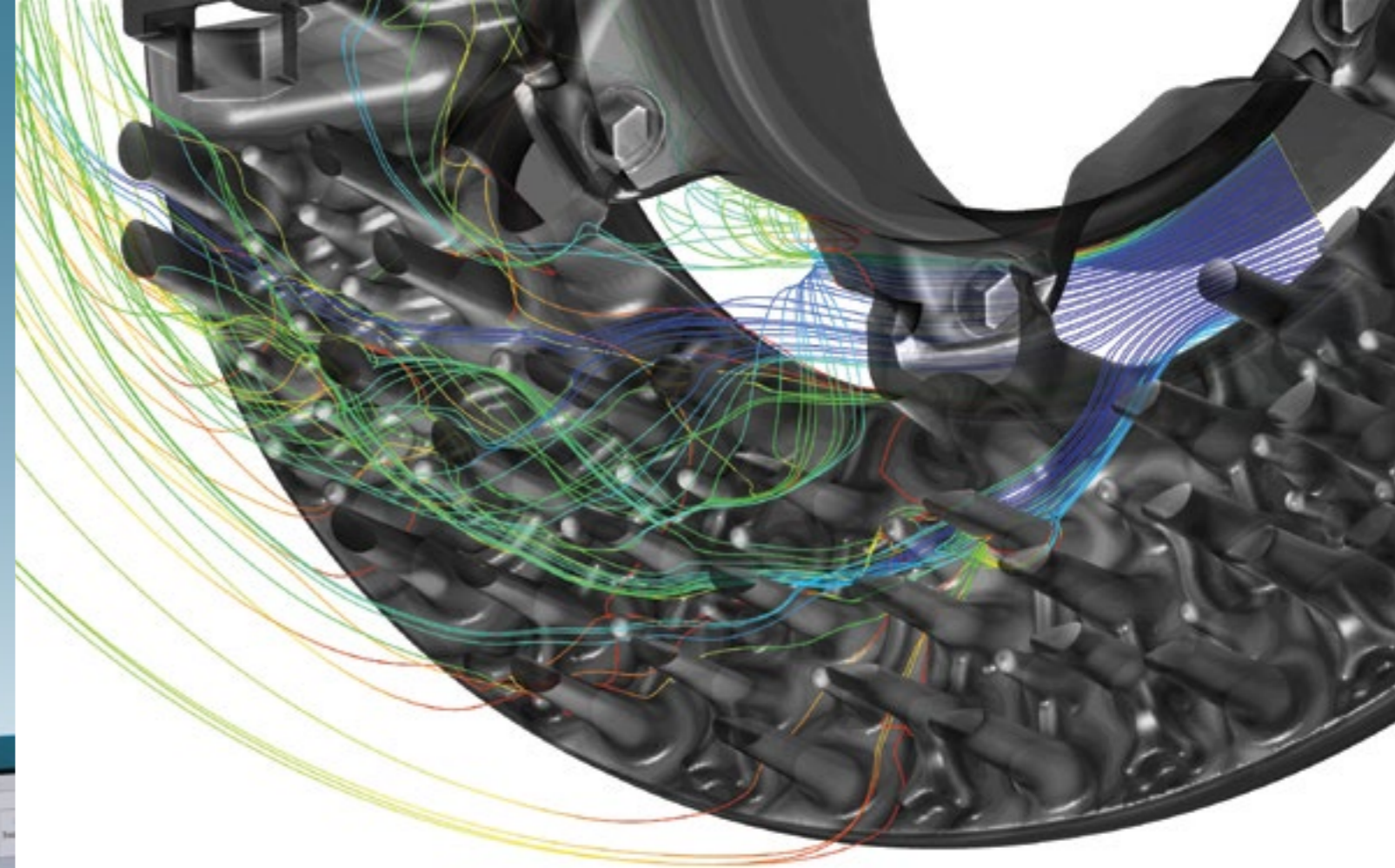
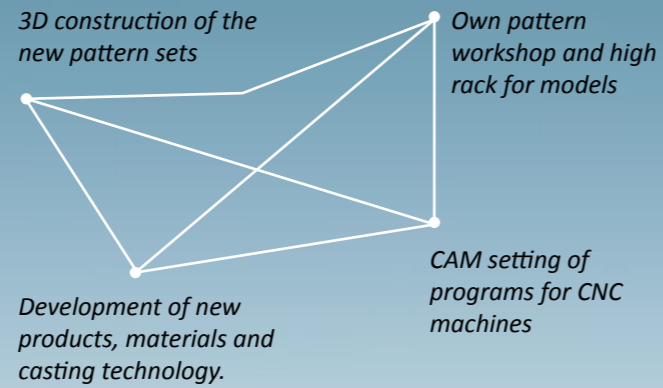


The beginnings of Kovis date back to the year 1976 when the founder Anton Pangrčič started an independent business trip. Throughout its development history, Kovis encountered many challenges, set up by the

business environment. These were the need for dynamic development, changing the business model and continuous investment in development, in order to maintain an international competitive advantage.

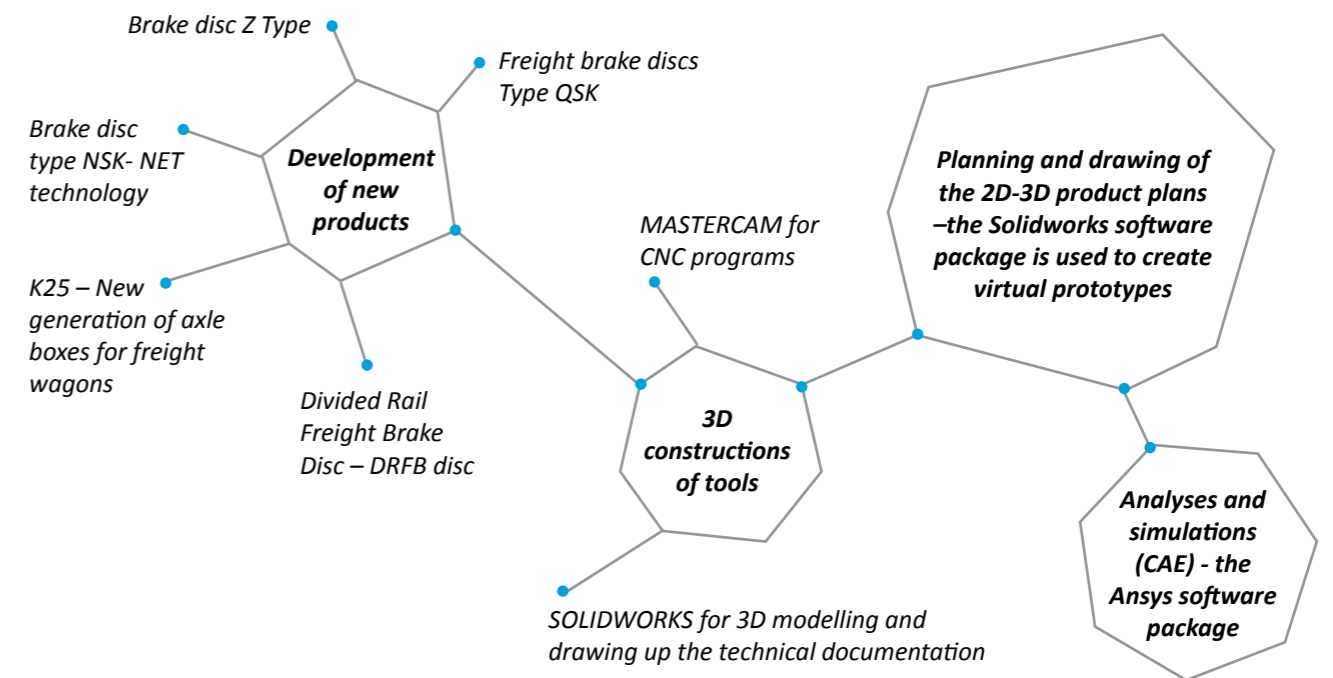
Development and Technology

Modern technology, innovative approaches, professionalism and flexibility, which are our key competitive advantages, enable us to offer our customers a quality product according to their requirements in a very short time. Each idea of casting starts with creative thinking and planning on the production of pattern sets and determination of casting technology.



Annually we develop up to:

Together developed:



High Quality Castings Made of Grey and Nodular Cast Iron

Use of advanced information system for traceability in the production.

Production of castings between 5 and 200 kg.

Flexible-oriented production of castings.

Production of 13.000 tons of castings annually.

Production of castings of all types of grey and ductile iron.

Castings from nodular cast iron according to EN-1563:

- EN-GJS-400-18-LT,
- EN-GJS-400-15,
- EN-GJS-500-7,
- EN-GJS-500-14
- EN-GJS-600-3

Castings from grey cast iron according to EN-1561:

- EN-GJL-300,
- EN-GJL-250,
- EN-GJL-250 (special – improved quality for manufacturing disc breaks)

Special cast irons:

- ADI (EN-17804)
- Vermicular graphite iron (EN- 16079)
- EN-GJS-400-18LT (-40)

In Kovis Livarna we produce high quality castings made of grey and ductile iron, which we combine with tradition and continuous development. We adapt our solutions to the specific needs of our customers to which we include in the process of product planning.

The production process follows the European strategies for the efficient use of raw materials, circular processes and re-use and durability of production.



AUTOMATIC MOULDING LINE

- dimension 1190x990x300+300
- weight of castings from 5-200 kg
- average flow 30 moulds/h
- automatic control of the sand properties (Green Sand Control)
- Webac mixer with max. capacity 100 t of sand per hour



CLEANING PLANT AND PAINTING AREA

- 3 sandblasting machines: G450, VKP 1200 and VKP 1200D.
- 2 CNC multifunctional grinding machines: MAUS 600 and MAUS 1200.
- A KUKA robot arm for edge milling
- An automatic line for painting the castings by immersion in water-based paints. Painting with red or black water-based paint.



CORE PLANT

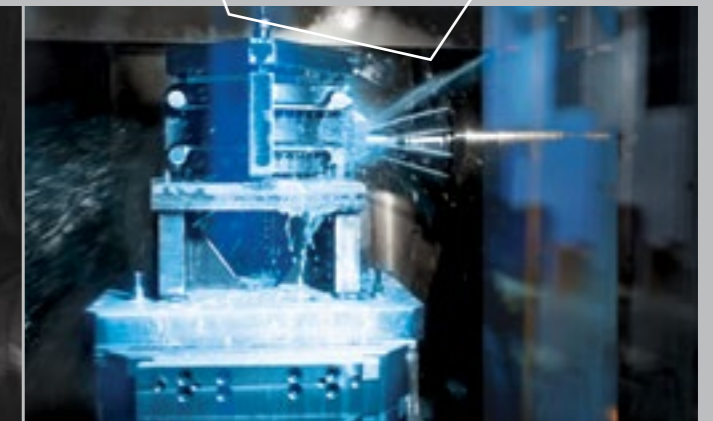
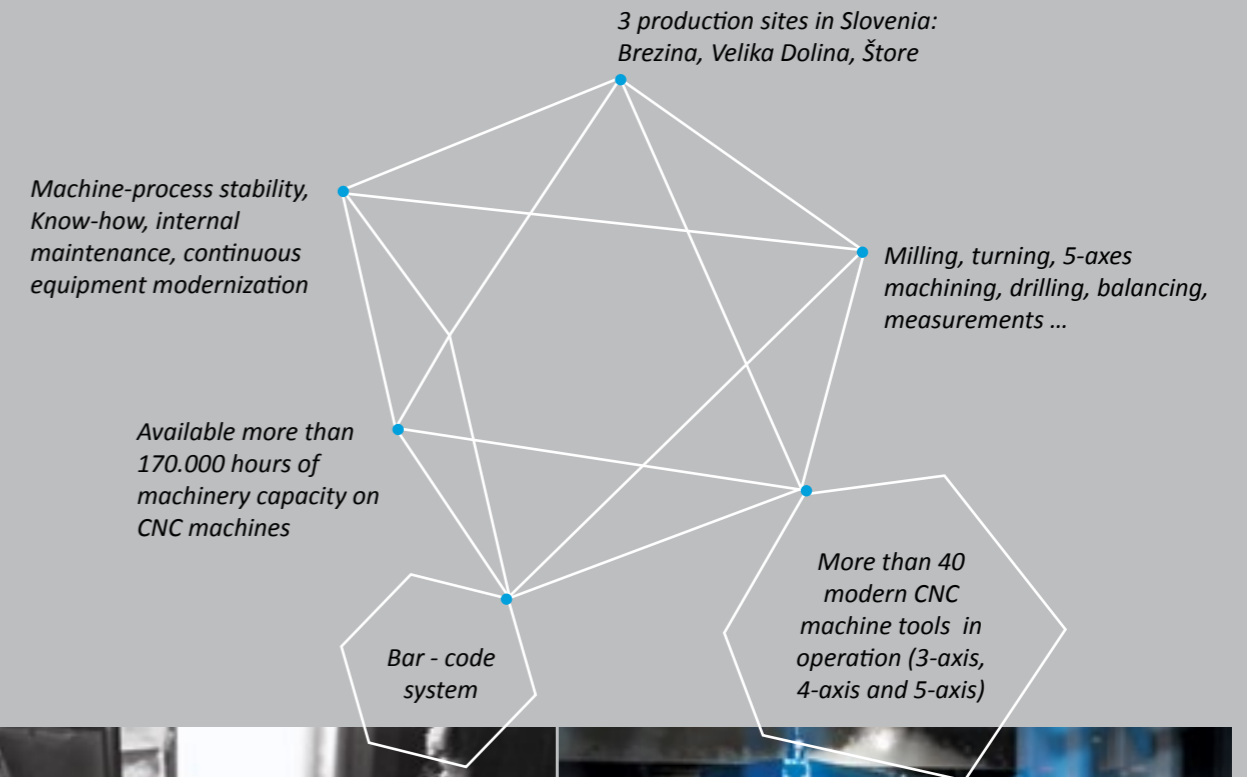
- Cores are produced in different shapes and sizes (up to 120 kg), and different difficulties with modern core machines.
- Core production according to the COLD BOX and CO2 procedures (manually).
- Core machines: 25L, 30L, 60L in 80L
- In order to achieve a better quality of the casting surface, we paint the cores with water-based paints.
- Special gas liner for drying painted cores.

MELTING PLANT

- Automatic filling/dosing of cupola furnaces
- 2 cupola furnaces diameter 650



High Quality Mechanical Machining



We provide production on modern CNC machines the brands OKUMA, MAZAK and DMG. With constant technological advancements and investments in a modernization of our machine park, we

can make technologically very demanding products and follow the customer's development projects and requirements. A modern machine park allows us to compete in international markets.

Painting and Protection

Automatic painting line

Painting is performed for the needs of the company, and also as an offer for other customers. We provide different portfolio of water thinnable painting process and customer-oriented painting concept.

The line includes:

- 3 cabinets for lacquering
- 1 cabinet for plastification and electrostatic varnishing
- evaporation chamber
- drying chamber
- conveyor system
- chemical preparation - rinsing system (T50-60°C).

Logistics Services

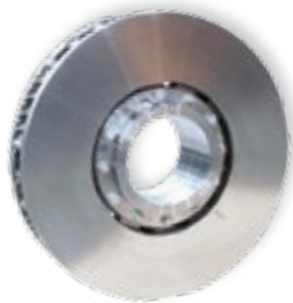
The basic purpose of the company is a quality and reliable freight transport in domestic and international traffic. We have a modern and ecologically economical fleet. All vehicles are equipped with a tracking, communication and navigation system.

In the fleet we have 6 trucks: Scania, Mercedes Benz and Man.





Railway Industry



brake discs



axle boxes for passenger transport



gearbox housing



axle boxes for freight transport



stator housing



multi - consoles

BRAKE DISCS

We produce axle and wheel brake discs of various sizes (in production more than 550 different types) and a variety of quality materials (GJL, GJV, GJS, GS). Production is also possible after the customer's requirement or according to provided specifications.

AXLE BOXES

The company produces axle boxes for freight and passenger wagons for the axle load of 22, 5t up to 25t for bogies type Y25/25t. Kovis developed its own axle box type Y25/25t, which can be used for both, 22,5t and 25t axle load. By new 25 ton axle box we reduce the weight of the casting by more than 15%, and also, the new axle box is completely interchangeable with the existing axle box BA386.

OTHER PRODUCTS FOR RAILWAY VEHICLES:

- Axle boxes for passenger vehicles, flanges, multi-consoles
- Stator housing
- Gearbox housing
- Different covers
- Brake shoe holders
- Caps
- Holders of brake pads
- Other holders for bogies



Agricultural and Construction Machinery



Castings made of grey, ductile iron and steel are used in high-tech products, such as trains, airplanes, agricultural and commercial vehicles. The company's development includes international faculties for materials as well as foreign companies, which are leaders in the development of input raw materials.

The company is aware that in the process of casting it is important to reduce carbon emissions and energy consumption, while limiting the need for those raw materials that are rare in Europe. In the development of new castings, they are looking for new casting technologies, which optimize the production process and enable better processing.





Other Industries

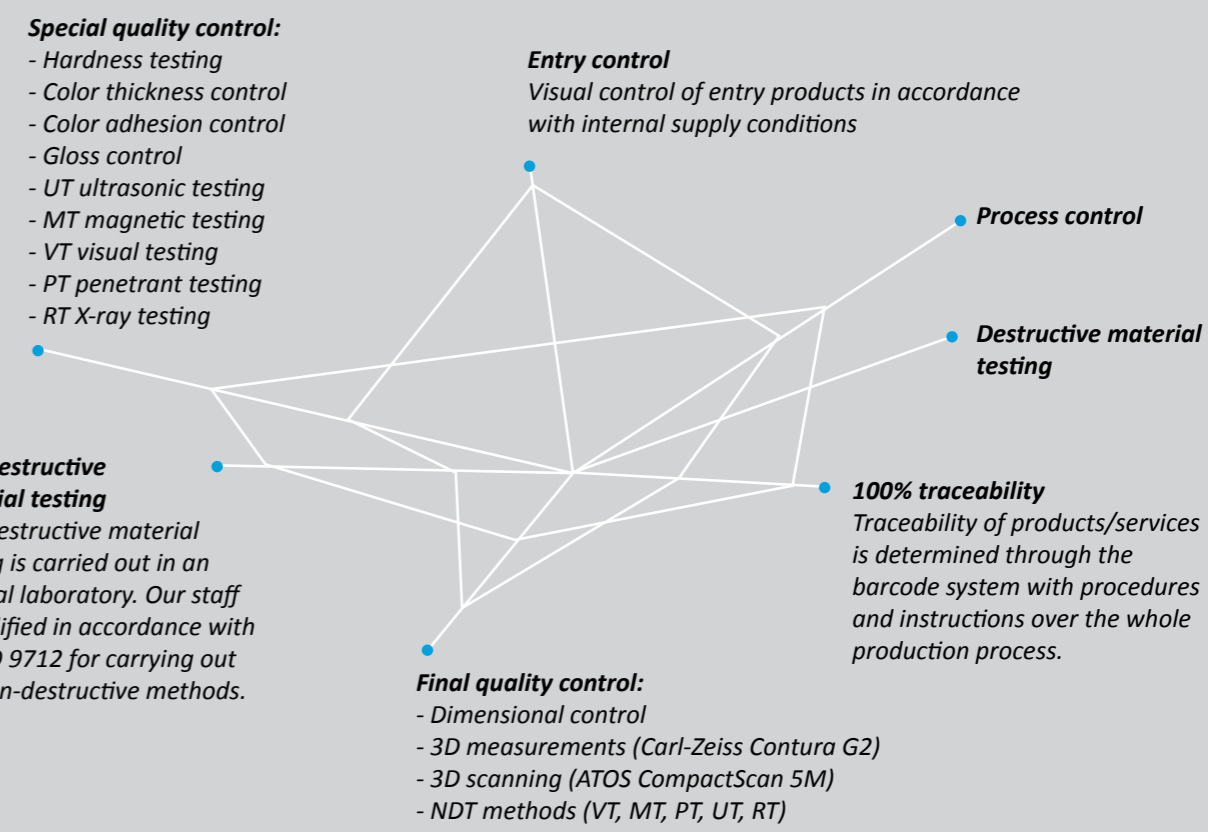


Quantity, weight, material, required quality and accuracy represent the criteria that with knowledge, years of experience and flexibility are successful in the production of castings made of ductile iron (EN GJS-400-18LT, EN

GJS-500-7, EN GJS-600-3) and cast iron (EN GJL-300, EN GJL-250, EN-GJL-200 special). This is how the company provides functional value for business partners from different industrial sectors.



Quality



Kovis has a long tradition in ensuring the highest quality products and processes. Efforts to continuously improve the efficiency and effectiveness of our business in the direction of social responsibility and sustainable development are demonstrated through the following system standards and obtained permits:

ISO/TS
22163:2017

ISO 9001 – Quality Management System

ISO 14001 – Environmental Management System

BS OHSAS 18001 – Occupational Health and Safety System





Environmental Aspects



Careful use of all natural resources – electricity, basic raw material, water, etc



Waste reducing – to reduce the waste generated from the entire manufacturing process by using planned ecological islands and by controlling of their removal



Recycling – renewable energy and by-products



Care for clean and safe environment – by integrating the latest technological solutions and with the constant and careful maintenance of machines and appliances



Prevention of pollution and emergency situations – active monitoring and continuous improvement of all our processes

In KOVIS, we understand social responsibility as a business activity in favor of the company itself and all its stakeholders. We work on the principles of sustainable development. In addition to good business results, we strive to take care for both the environment in which the company operates and for the personal and business growth of its employees.

In Kovis, care for the environment is embedded in all levels of business, as evidenced by the obtained ISO 14001: 2015 certificate. The development of business processes as well as new products and services is carried out with minimal impact on the environment.

