



IRON FOUNDRY & CASTING

DESIGN & MANUFACTURE

HARDENING & HEAT TREATMENT



BISON SERVICES

We are a modern, innovation-orientated company with a long trade and business tradition, specializing in manufacturing high-quality iron castings.

The technological process takes place in a newly built facility with a total area of 8.500 m².

Currently the foundry is taking part in the investment project co-financed with EU grants called "Innovative technology for manufacturing castings using a novel method of metal refining".



The company's state-of-the-art manufacturing plant, as well as the commitment and professionalism of our staff, allows us to process each task quickly, thus providing superior service. Our modern foundry is equipped in a new ecological induction **furnace with a total capacity of 2x2T**. Highly skilled engineers have extensive experience and solid track records within the foundry industry.



The company provides comprehensive services in regard to manufacturing castings through:

- ✓ Pattern design & construction
- ✓ Manufacturing
- ✓ Machining
- ✓ Painting, assembly & shipment
- ✓ Selection for best laboratory analysis & best technical method

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The entire technological process is subject to the full control system in terms of raw material quality, cast iron metallurgical quality, plastics chemical composition & moulding sands analysis and castings dimension control.

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All castings are made to special order to meet individual customer requirements and are made from different types of cast iron.

- ✓ Castings of grey cast iron
- ✓ Castings of ductile cast iron
- ✓ High-quality castings of ductile cast iron - designed for use in extreme conditions

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Ductile iron is characterised by the high tensile strength, resistance to high pressure and possesses excellent forming properties. Can also deform without causing much damage. Suitable for manufacturing of crankshafts, piston rings, bearings, gears, machine tools, agricultural machinery, hydraulic turbines etc.

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Iron Foundry & Casting



We are a customer-orientated company, which focuses on quality, modern solutions and development in relation to the market needs.

To ensure a full and complete offering the company opened a machining treatment department, that enables us to meet the most complex technical requirements.

The machining department is equipped with:

- ✓ CNC Vertical Turning Centres
- ✓ CNC Milling Machines
- ✓ CNC Lathe Machines
- ✓ Bed Grinding Machine



Our new machine Okuma VTR-350A has a double column turning centre which provides large capacity machining, with high rigidity and thermal stability for close tolerance machining. Suitable for machining **workpieces with a max. turning diameter of Ø3500mm and max. length of 1600mm.**



Iron castings manufactured in our company are used in a wide variety of industries i.e.

- ✓ Agricultural machinery (plough blades, plowshares, tow hooks, wheel hubs, handle bars etc.)
- ✓ Railway (hub caps, track and turnout elements, track maintenance wheels, etc.)
- ✓ Construction (excavator teeth, slide rails, shafts etc.)
- ✓ And others ...



We are an international manufacturer of top-quality technological tooling for machining purposes. The company provides construction, engineering and research services, as well as technological design processes.

In the last quarter of 2014 we moved under the roof of a newly built 14.000 m² manufacturing plant where we assembled all the essential resources to provide service of the highest industry standards.

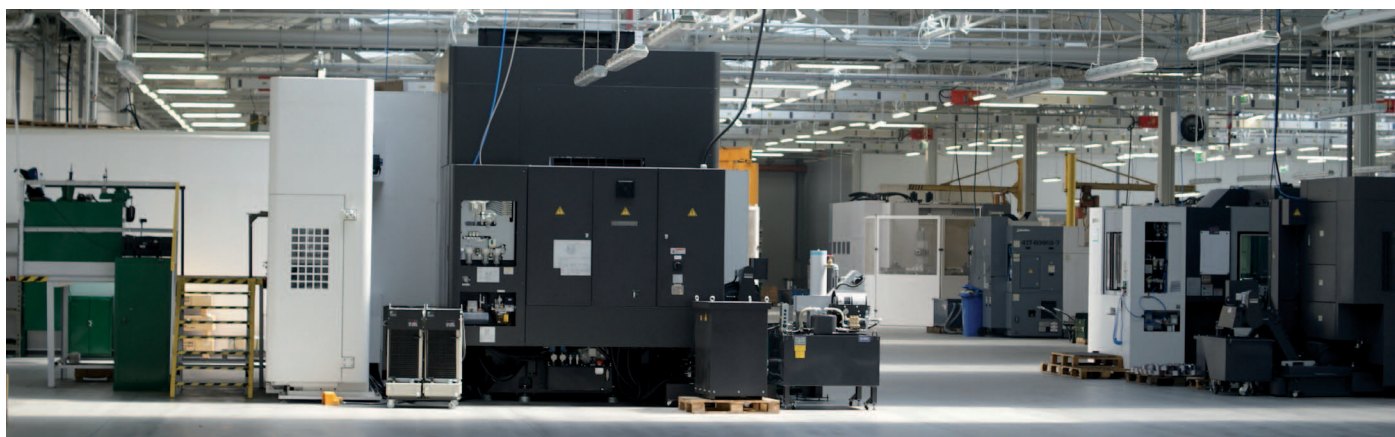
We have also purchased new precise machinery, such as Okuma VTM or Multus series multifunction machines which have significantly expanded our capabilities.



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The Okuma's MULTUS U4000 is a state of the art multitasking machine with a true Y-axis, automatic tool changer and sub-spindle. The machine is capable of handling milling, turning and boring processes with a wide variety of different tools.

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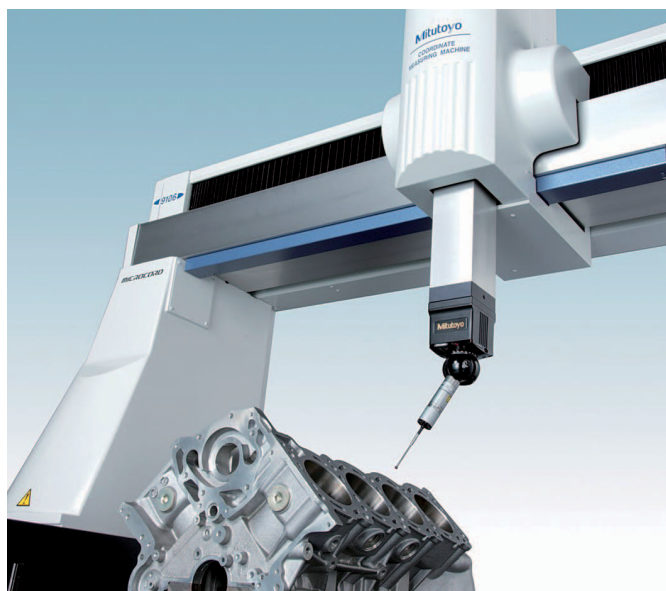
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Studer favoritCNC is a universal cylindrical grinding machine designed for grinding medium-sized workpieces in individual and serial production. The machine bed made of solid Granitan® S103 forms the basis of the cylindrical grinding machine, which is equipped with high-quality components and can therefore guarantee exacting precision, performance and reliability. High process speeds, on the one hand, while on the other hand the short auxiliary times guarantee maximum precision with **in-feed movements of 0.0001 mm**.

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Thanks to our new measuring equipment such as Mitutoyo Crystal-Apex S (**accuracy up to 1.7+4L/1000 µm**) and our highly-qualified staff, we make sure even the most ambitious precision machining is carried out according to the requirements.



Our engineering staff are constantly following industry trends, thereby improving their qualifications. Thanks to the extraordinary people with passion and ideas, the company's business area is focused towards innovation.

- ✓ Construction engineers
- ✓ Engineering technologists
- ✓ Production engineers
- ✓ CAD/CAM Software programmers
- ✓ Planning & Development admins



The machinery park is comprised of the latest machinery from Okuma, Haas, Ingersoll, Studer, Ziersch Tech, Okamoto and the other leading manufacturers. Our new VTM-1200YB and VTM-2000YB 5-axis multitasking CNC turning machines are suitable for **heavy-duty machining of large-diameter workpieces with a max. turning diameter of Ø 1.200 mm and Ø 2.000 mm.**

The company's state-of-the-art machine park provides machinery to meet the latest technological processes. We offer such solutions from leading manufacturers in the machinery industry i.e.

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|-------------|----------------|
| ✓ Okuma | ✓ Studer |
| ✓ Haimer | ✓ Ziersch Tech |
| ✓ Ingersoll | ✓ Pramark |
| ✓ Okamoto | ✓ Mitutoyo |

Currently we are developing two innovative solutions for clamping technology.

The first of those projects allows the clamping of a workpiece in a new and very flexible way. It is more adjustable than conventional products and allows safe and rigid clamping of irregular shaped workpieces.

The second solution brings significant savings thanks to cost reduction. It improves machine capabilities by implementing more precise control over the machining process.

Additional purposes of the project include:

- ✓ Development of R&D department
- ✓ Increased employment
- ✓ Introduce pro-environmental solutions



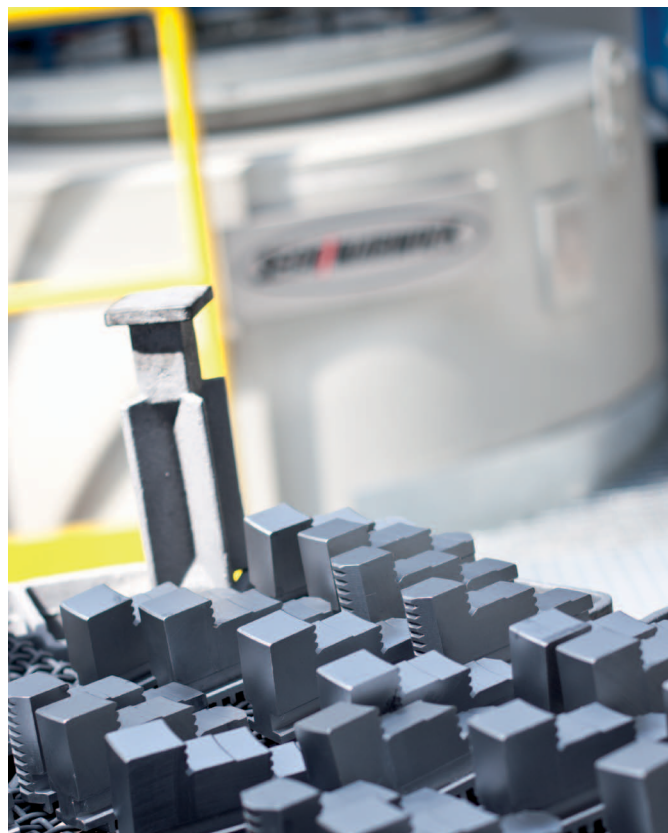
The company is effectively using up-to-date supporting tools:

- ✓ 3D Construction Modeling software (SolidWorks, DraftSight)
- ✓ Construction document management system (SolidWorks Enterprise PDM)
- ✓ Programming of numerically controlled machines (EdgeCam)
- ✓ Business Process Management (SAP)
- ✓ Customer support online platform



Our modern company operates within the high-tech heat treatment and thermo-chemical treatment sector.

From the beginning of operation the company is efficiently expanding the business into new markets, while gaining new business partners. The company guarantees a wide range of services, together with their high quality.



The heat treatment unit is taking part in the investment project co-financed with EU grants called "Implementation of innovative service for surface cementing of details using the PreNitLPC® technology".



The company offers services in the area of thermo-chemical volume and surface treatment i.e.

- ✓ Details cementing with surface carburising using the PreNitLPC® method with a direct hardening in oil or liquid nitrogen
- ✓ Details surface carburising using the PreNitLPC® method

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The vacuum steel carburising technology PreNitLPC® significantly reduces carburising cycle time, offers numerous advantages in terms of the production economy and quality of final products. The technology is also more environmentally friendly than conventional methods.

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- ✓ Oil or liquid nitrogen hardened in heated vacuum furnaces
- ✓ Large dimension details hardening in a polymer heated in a protective atmosphere
- ✓ Induction hardening in numerically or conventionally controlled devices
- ✓ Press hardening
- ✓ Annealing, tempering, stabilizing
- ✓ Nitriding using the ZeroFlow® method

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The ZeroFlow® method is based on the use of nitriding treatment with a single-component atmosphere composed of ammonia (NH₃).

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- ✓ Details sanding and sandblasting
- ✓ Blackening (black oxide)

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Steel details can be protected from corrosion by applying a black oxide coating also commonly known as chemical blackening of steel. Black oxide coating is a low-cost method of protecting steel and stainless steel parts from corrosion and imparting an attractive finish.

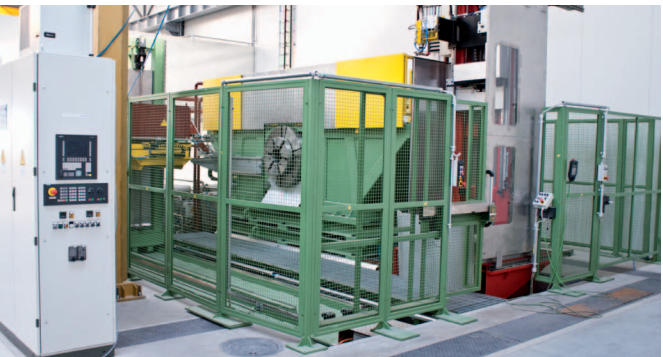
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Hardening & Heat Treatment



The company's state-of-the-art machine park provides machinery to meet the latest technological processes i.e.

- ✓ Device line for induction hardening of various detail surfaces, including shafts and gears
- ✓ Double-chamber vacuum furnaces with oil hardening and cementing treatment
- ✓ Vacuum furnaces for tempering and nitriding treatment
- ✓ Vacuum furnaces for tempering and stabilizing treatment
- ✓ Pit furnaces for carburising treatment using the PreNitLPC® method with working chamber dimensions of Ø 1000x1250 mm and Ø 1250x1250 mm
- ✓ Pit furnaces for nitriding treatment with working chamber dimension of Ø 1000x1500 mm
- ✓ Tank chamber furnace for hardening, annealing and stabilising treatment of large details in a protective atmosphere
- ✓ Single-chamber furnace for nitride hardening and cementing treatment with working chamber dimension of Ø 600x400x350 mm
- ✓ Chamber furnaces line
- ✓ Details blackening line with a maximum length of details 800 mm
- ✓ And many more ...



Our machinery park is comprised of the latest machinery from SECO/WARWICK brand – a global leader manufacturer of heat treatment equipment of metal and conducting thermal processes in controlled atmosphere and vacuum.





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