



STROJÍRNY A STAVBY TŘINEC

BASIC INFORMATION

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BASIC INFORMATION

The Company STROJÍRNY A STAVBY TŘINEC, a.s., is a stock-holding subsidiary company of TŘINECKÉ ŽELEZÁRNY, a.s.

The long-term tradition of production for domestic and foreign customers covers especially custom-made engineering production like technological units and weldments incl. the CNC machining, manufacturing of structures, smith forgings and manufacturing of metallurgical rolls for hot rolling process in the engineering.

The company ensures activities especially in industrial and civil building incl. the turnkey projects (complete supplies) and road building incl. the repairs in the building industry.

The company has a long-term experiences with repairs and maintenance of manufacturing equipment of TŘINECKÉ ŽELEZÁRNY, a.s. in field of mechanical, electric and building works too.

The Company consists of production plants:

- **MECHANICAL PLANT**
- **LOCKSMITH PLANT**
- **ROLL – TURNING PLANT**
- **ELECTROTECHNICAL PLANT**
- **BUILDING PLANT REFRACTORY – BUILDING PLANT**
- **DESIGN & DEVELOPMENT DEPARTMENT**

The long-term production experiences, wide range of production possibilities and services, up-to-date CNC machine tools, modern welding technology of the Construction Workshop incl. the certificates for welding of complex structures, availability of using high quality steels from the mother company guarantees that Strojírny a stavby Třinec, a.s. will be an interesting business partner for you.

The Company is a member of:

- **Národní strojírenský klastr, o.s. (Czech Machinery Cluster)**
- **Svaz podnikatelů ve stavebnictví v ČR (Association of building entrepreneurs of the Czech Republic)**
- **Česká asociace ocelových konstrukcí (Czech Constructional Steelwork Association)**

THE QUALITY CONTROL MANAGEMENT SYSTEM

The certified Quality Management System acc. to EN ISO 9001:2008 is in compliance with International Standards and regulations. It provides guarantees that conditions for conformity of delivery with requirements specified by a customer have been created.

The Quality Control Management System refers to all processes and activities of company. Product certificates provide a guarantee that technical and utility parameters comply with the demands defined in specific standards.

ENVIRONMENT

All utilized technology, material and means of production used in Strojírny a stavby Třinec, a.s. are carefully chosen in reference to Integrated Quality System, EMS and Occupational, Health and Safety Management to minimise negative impact to environment according to International Standard EN ISO 14001:2004 and occupational safety according to OHSAS 18001:2008 Standard.

CERTIFICATES AND LICENCES

- Quality Management System certification in accordance with the EN ISO 9001:2008 Standard
- The Environmental Management System in accordance with the EN ISO 14001:2004 Standard
- Quality Management Systems - Guidelines for quality management in projects ISO 10006:2004
- The Occupational Safety and Health Administration system pursuant to the OHSAS 18001:2007
- Welding Licence (Grosser Eignungsnachweis) for structures welding acc. to DIN 18 800-7: 2008-11 (*SLV Berlin*)
- Welding Licence for structures welding acc. to Czech Standard ČSN EN ISO 3834-2, TKP 19 SŽDC and section 19 TKP MD ČR (*TÜV NORD Czech, s.r.o.*)
- Quality certificate for manufacturing of pressure tanks and pressure pipings, direction 97/23/EC, EN 13445, EN 13480, EN ISO 3834-2 and EN 12952
- Welding Licence for manufacturing and assembly of structures according to Czech Standard ČSN EN 1090 – 2 (*TÜV NORD Czech, s.r.o.*)
- Welding according to AWS D1.1-2010
- Product certificate for manufacturing of smith forged bars from Quality Material P355QH1 and C35 E acc. to PED 97/23/EC Standard, annex 1, section 4,3 (*AD 2000 - Merkblatt W0*)
- Licence for manufacturing and supplies of forging of axles (smith forged, roughed and machined) for railway cars acc. to Czech Standard TP-SAST-01, 02 (*České dráhy - č.342*)
- Licence for manufacturing of asphalt matters (asphaltic concrete) (*VÚPS Praha*)

ACREDITED MEASURING CENTRE

The Measuring Centre is equipped with 3D co-ordinate measuring appliance MITUTOYO and with the length meter CARL-ZEISS-JENA ULM 01-600 C.

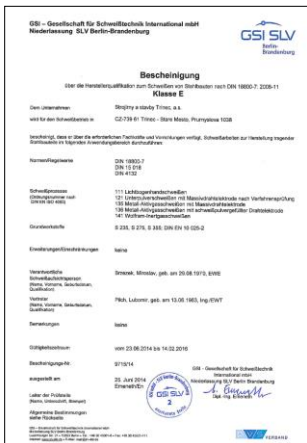
Measuring centre offers:

- Calibration of length measures
- Measuring and calibration services

ACREDITED CALIBRATION TEST-ROOM No.: 2241

The test-room offers services for calibration of electric values:

- Calibration of electric measuring instruments
- Direct-current voltage up to 1 000 V
- Direct current up to 1 000 A
- Alternating voltage up to 750 V
- Alternating current up to 1 000 A
- Resistances up to 100 Mohm



DIN 18 800-7: 2008-11



EN ISO 9001:2008



EN ISO 14001:2004



ISO 10006:2004



OHSAS 18001:2007

MECHANICAL PLANT

MAIN ACTIVITIES

PRODUCTION

- **Technological units** incl. the assembly of hydraulic, pneumatic, electric parts and project engineering management
- **Weldments and structures** incl. the machining, surfacing and the assembly
- **Cranes and suspension devices** incl. the design (turnkey projects - complete supplies)
- **Pressure tanks, piping** incl. the assembly
- **Single-purpose engineering machines and appliances acc. to own or customer's technical drawings**
- **Smith forgings up to max. weight 3 tonnes incl. the heat treatment and CNC machining**
- **Overhaul repairs and maintenance of manufacturing equipment, especially for metalurgy**
- **Overhaul repairs and modernization of machine tools and forming machines**
- **Machine parts, spare parts parts incl. the renovation**

SERVICES

- Heat treatment, ionic nitridation, induction hardening
- Supplies of hydraulic hoses incl. the couplings (complete supplies – repairs)
- Saw band welding (width 13 ÷ 54 mm; min. thickness 0,5 mm; max. thickness 1,6 mm)
- Thermometry services (Thermal camera Fluke Ti45)
- 3D portable digital electro-optical measurements

MACHINERY

TURNING

| Lathes | Workpiece max. D | Max. length | Note |
|---|----------------------------------|--------------------------------------|------------------------------|
| Vertical turret lathes SKIQ 16 CNC | 2 000 mm 1 250 mm 2 600 mm | 1 500 mm * 1 000 mm 1 570 mm * | + copying device * height |
| NC lathes SUA 63 Numeric MAS 70/4500 CNC KH 35 CNC | 360 mm 490 mm 1 050 mm | 3 000 mm 4 500 mm 1 100 mm | |
| Centre lathes | max. 2 000 mm | 8 000 mm | |

BORING - CNC, NC system

| D of spindle | Table size | Note |
|--------------|------------------|---|
| Ø 100 mm | 1 000 x 1 100 mm | |
| Ø 110 mm | 1 400 x 1 600 mm | max. load of work table 8 t |
| Ø 130 mm | 1 600 x 1 800 mm | |
| Ø 160 mm | 2 000 x 2 000 mm | 1 work table + table 1 000 x 1 000 base (plate) 4 000 x 3 700 working platform max. weight 20 ÷ 40 t |
| Ø 180 mm | 2 500 x 3 000 mm | Stand Feeds: X, Yaxis = 11, 3,5 m, W+Zaxis = 2,5 m, Modular Floor table 6,4 x 3,9 m, P = 84 kW revolving table 360°, Load max 40 t, Repleceable milling heads, Spindle speed 1÷2 500 ⁻¹ |
| Ø 200 mm | 2 000 x 2 000 mm | 1 work table + table 1 000 x 1 000 mm base (plate) 4 000 x 5 600 mm working platform max. weight 20 ÷ 40 t |

SLOTTING AND SHAPING

| Shapers and slotters | Parameters |
|----------------------|---|
| Shaper | max. cutting stroke: 700 mm |
| Slotter | max. cutting stroke: 1 150 mm |
| Gear shaper | Ø 50 ÷ 1 720 mm; pitch angle: 7° ÷ 10° max. pitch angle: 180° |
| Shaper FELOW OH 5 | max. Ø of workpiece body: 800 mm outside operation: max. Ø 500 mm inside operation: Ø 500 mm module: 1 ÷ 8, height: 125 mm workpiece height: 260 ÷ 290 mm |

MILLING

| Milling machine | Size |
|---|---|
| Slot | max. slot width 32 mm, length 800 mm |
| Vertical | 400 ÷ 1 000 x 2 000 ÷ 3 150 mm table size |
| MCV 1270 Speed | powerful and speed shape machining – vertical centre, table clamping 1 500 x 670 mm, feed rates: Xaxis = 1 270 mm, Yaxis = 610 mm, Zaxis = 720 mm, max. table load 1 200 kg, spindle speed 20 ÷ 12 000 min ⁻¹ |
| Horizontal | 400 x 2000 mm table size |
| Universal | 300 ÷ 450 x 1 350 x 2 000 mm table size |
| FSQ 80 CNC | horizontal or vertical work, revolving table 800 x 800 mm |
| FSQ 80 GM/A2 | feed rates: X, Y, Zaxis = 2 000 x 900 x 800 mm, table clamping max. 800 x 2 000 mm, max. table load 3 000 kg/m ² |
| FNG 40 CNC A | shaped workpiece machining feed rates in: X,Y, Zaxis = 600 x 400 x 400 mm, table clamping 400 x 800 mm, max. table load 300 kg |
| Portal FVC 160 CNC/3,2 KYKLOP | powerful, high precisions machining – portal machining centre, table 3200 x 1600 mm, max. table load 8 t, feed rates X,Y, Z axis=1 ÷ 10 000 mm.min ⁻¹ , positioning accuracy Pa = 0,02 mm |
| Gear milling machine Gearing types: Fellow system <u>Machine type OH 50</u> | - external Ø of teeth 50 ÷ 500 mm, tooth height 125 mm - internal Ø of teeth up to Ø 450 mm, tooth height 125 mm, total workpiece height 160 mm - module 1 ÷ 8 - accuracy of manufacture IT 7 - roughness Ra 1,6 ÷ 0,8 according to material of workpiece - pressure angle 20°; straight teeth β = 0°- přímé zuby β = 0° |
| Hobbing machine Machine type:LORENZ; FO-10; FO-16; FO-25 | - external Ø of teeth Ø 20 ÷ 3 000 mm - module 1 ÷ 22, angle Ø = 20°; 1 ÷ 20 angle Ø = 15° - accuracy of manufacture IT 7 ÷ 8 - roughness Ra 1,6 ÷ 3,2 - angle pressure Ø = 15°; 20° - straight and helical teeth β = 0 ÷ 48° |
| Machine type: FO-16; FO-25 | - external Ø of teeth max. Ø 2 500 mm (3 000 limited gearing rigidity) - module max. 45; accuracy of manufacture IT 10; - roughness Ra 6; straight teeth |
| Worm-gear hob | - module 1 ÷ 25, α = 15°; 20° - single-thread and double-thread worm |
| Sprocket hob | - circular pitch = 9,525 ÷ 136 mm - roller diameter = 6,35 ÷ 46 mm |
| Spline shaft hob | - size of one centring 32 x 800 mm - workpiece size max. Ø 130 x 5 000 mm |

GRINDING

| Grinding operations | Max. size |
|--|--|
| External | to Ø 600 x 3 080 mm (to the weight 1 200 kg) |
| Inside I | to Ø 650 x 600 mm |
| Inside II | to Ø 100 x 650 mm |
| Tool Grinding machine SAACKE UW IC NC | table clamping 130 x 130 mm, head stock height 135 mm, grinding travel 220 mm, grinding spindle speed 2 000 ÷ 10 000 min ⁻¹ spindle Ø 60 mm |
| BUC 85C NC/4000 Practic-universal cylindrical grinding machine | External grinding: diameter Ø 850 mm, L _{max} 4 000 mm, m _{max} = 3 t, Ra 0,2, IT 5, inside: max/min Ø = 400/100 mm, L _{max} = 500 mm, possibility of grinding of cones, radiuses, curves |

FORMING AND PRESSING

| Workpiece | Parametr | Note |
|-----------------------|----------------------------|---|
| Shaped forgings | up to max. weight 600 kg | pinions and bandages up to the weight 600 kg |
| Shaped shaft forgings | up to max. weight 3 000 kg | max. Ø 350 mm max. L 3 000 mm |
| Bars | up to max. weight 3 000 kg | max. 240 x 240 mm max. L 6 000 mm |
| Pressings | 120 x 425 mm | friction press, max. press power 250 t |

BROKE FORMING, BENDING, ROLL BENDING

| Bending operation | Parametr |
|---|---|
| Broke forming CNC Brake Press Safan H-Brake 480T-4100-TS 1 | up to sheet width 4 000 mm up to sheet thickness 25 mm |
| Bending | up to sheet width 1 600 mm and thickness 5 mm |
| Roll bending | min. Ø 200 mm, min. L 1000, min. sheet thickness 5 mm; max. Ø 1000 mm, max. L 10 000 mm, max. plate thickness 30 x 1500 mm; max. plate thickness 15 x 3 000 mm |
| Four cylinder hydraulic bending machine MCB 3053 | max. plate thickness 54 x 3 000 mm, bending of cones |

SHEARING, CUTTING

| Operation | Workpiece dimension |
|---|---|
| Shearing | max. thickness 12 mm, max. L 3 000 mm |
| Cutting (saw Behringer XHBP 420/723 G) (saw Pegas 440) | max. 720 x 430 mm, max. Ø 420 mm max. L 7 500 mm; 30°, 45°, 60°; max. 600 x 500 mm |

PAINT APPLICATIONS, SPRAYING

| Spraying box - Max. size | Note |
|--|--|
| Box size: 10 x 4,5 x 5 m Max. weight 10 t | according to agreement e.g. water paint, epoxy paint, paint with zinc, fast drying etc. |

STEEL-GRIT BLASTING

| Steel-grit blasting box - Max. size | Note |
|--|--|
| Box size: 10 x 4,5 x 5 m Max. weight 10 t | according to agreement e.g. mobile blasting device |

WELDING, FLAME CUTTING, ELECTROSPARK CUTTING

- arc welding
- automatic and manual shielded welding flame welding
- submerged – arc welding
- automatic carbon dioxide shielded surfacing
- oxygen cutting on NC machine – VANAD PROXIMA K30/85 (3 000 x 8 000 x 150 mm)
- CNC cutting machine RUM 3000 GP: plasma arc cutting: 12 000 x 2 550 x max. 40 mm;
oxygen cutting: 12 000 x 2 300 x (3 ~ 200) mm,
- CNC cutting machine RUM 2500 P: plasma arc and oxygen cutting: 6 050 x 2 050 x max. 25 mm,
- flame cutting
- electrospark cutting AGIE CUT SPRINT 20,
- max. dimensions of workpiece: 300 x 200 x 220 mm, surface roughness of workpiece Ra 0,8 and AGIE Clasic (500 x 350 x 420 mm, Ra 0,4)

HEAT TREATMENT

Heat treatment is carried out in an electric bogie hearth furnaces or furnace-shafts which has a lining of filamentous materials. Its possible to carry out heat treatment in an inert atmosphere of nitrogen. The furnace temperature regime regulation is controlled by a central computer via thermal sensors with registration and recording of the process.

Cementation of the surface is provided by controlled carburization in protective atmosphere.

Material for heat treatment

- the whole range of steel grade including stainless steel, tool steel acc. to Czech Standards ČSN 11 ÷ 17 + 19 and theirs equivalents in compliance with EN, ASTM, DIN, AISI etc.
- cast steels,
- cast iron.

Type s of heat treatment:

- normalizing, normalizing with tempering,
- soft annealing, stress relief annealing
- counter-flake annealing
- wire coils annealing
- heat treatment
- tool steels hardening and tempering
- rolled bar products annealing, hardening and homogenization annealing
- gas case – hardening, pack hardening
- surface hardening
- oil hardening and water hardening

Main and auxiliary facilities, inside dimensions and specification:

- **Car–hearth furnace 2000 x 1000 x 6000 mm**, max. temperature 1 100 °C, possibly inert atmosphere, max weight of heat 20 t, single part 10 t (max. lifting capacity 10t)
- **Car–hearth furnace 1 000 x 700 x 1 500 mm**, max. t, 1 100 °C, possibly inert atmosphere, max. weight of heat, 1 t,
- **Shaft furnace, diameter 1 600 x 4 000 mm**, max. t 1 100 °C, possibly inert atmosphere, max. weight of heat 5 t,
- **Shaft furnace, diameter 1 000 x 2 000 mm**, case hardening with retort, equipped with an oxygen probe and controlled carburizing, max. weight of heat 2 t,
- **Two hardening shafts of the diameter 2 500 x 4 200 mm** (oil circulation),
- **Hardening tank 2 000 x 4 100 x 2 500 mm oil and water** hardening oil BURGDORF (oil and water with medium temperature circulation),
- **Hardening shaft with inert atmosphere, 600 x 500 x 750 mm**, max. temperature 1 280 °C
- **Car –hearth furnace 7 000 x 3 000 x 2 200 mm** max. temperature 1 050 °C, max. weight of heat 50 t

Induction hardening

- gradual induction hardening peripherically
- gradual induction hardening vertically
- gradual induction hardening method by tooth after tooth

Max. weight = 5 t,
Flat strips: Hmax = 150 mm, Lmax = 1 m, hardening = 50 ÷ 60 HRC (acc. to material), max. hardening depth = 6 mm **travelling wheel, gear wheels:** D min = 200 mm, D max = 2 000 mm, module m ≥ 10;
Cylindrical components: Dmin = 50 mm, Dmax = 200 mm, Lmax = 1000 mm (acc. to material)

Ionic nitridation

- carbonitriding a oxinitriding

D max = 1 m, H max = 1,5 m, m max = 3 000 kg

LOCKSMITH PLANT

MAIN ACTIVITIES

- Manufacturing and assembly of structures incl. the steel bridges for České dráhy (Czech Railways) and Slovenské dráhy (Slovak Railways)
- Overhaul repairs
- Manufacturing and assembly of cranes and crane runways
- Renovation and repairs of rubber conveyer belts
- Customer service of manual lifting mechanisms
- Calibration of suspension means
- All type balances repairs and calibrations
- A part of Locksmith Workshop is a METALOCK Centre
(repairs of machine component fractures by METALOCK process)

Repairs of machine component fractures or breakages by cold METALOCK repair process

Repair description:

- Jointing of fracture or breakage machine components by cold process using of special fixtures and clamps (carbide–nickel steel).
- Filling of special jigs and studs into the groups of holes which are drilled across the line of fracture; hand grinding of repaired surface.
- Bitting of twists „METALACE process“ into the fracture lengthwise for ensuring of joint
- rigidity and tightness which are consequently upseted into the compact cord; in case of large fractures and cracked or missing parts of material are inlaid „MASTERLOCKS“ into the repaired components.

Advantages:

- Saving costs for purchase of new machine part, or eventually complete machine
- Repairs directly on the spot without disassembly
- Rigidity and tightness of the joint (comparable to original quality material)

Samples:

- Cast iron, cast steel, aluminium and brass from 4 mm thickness
- Rolling mill stands, engine blocks, turbine casings, pump casings, gearboxes, gears, machine tool beds, presses etc.

MACHINERY

- Profile forming and plate roll bending (max. thickness 15 mm, max width 3 000 mm)
- Roll plate bending (max. thickness 10 mm, max. width 3 000 mm)
- Precise plate cutting up to thickness 200 mm, size 3,1 x 12 m
- Machining by horizontal milling machine W100
- Shielded welding, automatic submerged-arc welding
- Cutting of material by saws (size 600 x 500 mm)
- Steel-grit blasting of structures up to size 3 x 3 x 6 m

ROLL - TURNING PLANT

MAIN ACTIVITIES

- Production and machining of metallurgical rolls incl. the roll calibration
- Roll renovation by welding on
- CNC milling
- Repair of carriages for TŘINECKÉ ŽELEZÁRNY, a.s.
- Slab, billets, blooms grinding
- Wheel sets machining from D 300 mm to D 1 100 mm
- Renovation of wheel sets by surfacing incl. tyres
- Grab repairs
- Heat treatment of rolled stock for TŘINECKÉ ŽELEZÁRNY, a.s.
- Cutting of material

MACHINERY TURNING

TURNING

| Turning | Machine type | Work piece size weight | |
|---|--------------|------------------------|----------|
| profile surfaces conical surfaces rolls calibration | CNC lathes | max. Ø | 1 600 mm |
| | | max. length | 6 500 mm |
| | | max. weight | 40 t |
| classic rolls calibration | | max. Ø | 1 200 mm |
| | | max. length | 4 000 mm |
| | | max. weight | 15 t |
| classic turning incl. profile turning lathes | | max. Ø | 1 000 mm |
| | | max. length | 4 500 mm |
| | | max. weight | 15 t |

MILLING AND GRINDING OPERATIONS

| Operation | Limit dimensions of workpiece | Work piece size weight | |
|--|---|------------------------|----------|
| Milling - wobblers | max. diameter max. length max. weight | | 1 200 mm |
| | | | 4 500 mm |
| | | | 20 t |
| - various milling operations | max. size height | 2 000 x 2 500 mm | 2 000 mm |
| Grinding - on round shapes incl. cones | max. workpiece Ø max. grounded Ø max. length max. weight | 1 000 mm | 850 mm |
| | | 5 000 mm | 8 t |

| Grinding | Workpiece parameters | |
|---|----------------------|--------------|
| Special grinding machines CENTRO MASKIN (plane roughing of semi-finished products) | width | 200 ÷ 800 mm |
| | thickness | 110 ÷ 500 mm |
| | length | 6 000 mm |
| | max. weight | 5 000 kg |

| Cutting | Workpiece parameters | |
|---------------------|----------------------|--------------|
| Band saw MEBA 620-S | max. Ø | 620 mm |
| | max. size | 800 x 600 mm |
| | max. length | 10 000 mm |

ELECTROTECHNICAL PLANT

MAIN ACTIVITIES

Repair of machine and devices - repairs of all type motors:

- Low-voltage induction motors up to power output 630 kW
- High-tension motors up to power output 2,8 MW
- Direct-current motors up to power output 5 000 kW
- Synchronous motors up to power output 3 000 kW
- Transformer repairs up to power output 1,6 MVA

We repair of welding units, direkt – current generators, starters and alternators, hydraulic brake release valves, special gearboxes and vibrators to provide complete supplies. We provide welding on of shafts by shield welding and repairs of motor machine components.

The rotating parts are dynamic balanced up to weight 1,6 tonnes and length max. 2 930 mm and diameter max. 1 600 mm (balancing machine of type SCHENK acc. to Czech Standard ČSN 01 1410). We offer repairs of lifting magnets, manufacturing and repairs of starting resistors, repairs of manual electric tools too.

Electrical works, electric instalation

- Electrical wiring system of buildings
- Implementation of electrical units (production lines, high voltage wiring, etc.)
- Repairs and overhaul repairs of cranes and suspension devices
- Manufacturing of switchboards (low voltage)
- Lighting installation acc. to customer's requirements

We offer installation and maintainance of electric fire alarm systems, installation of remote control of cranes, conductors assembly and repairs and service of lifts too. We provide these services from technical drawings, assembly, auditors' report to supply delivery. We are able to offer you complete supplies – turnkey projects too.

Testing and general overhauling

- Testing and measurement of alternativ – current and direct-current motors (low voltage and high voltage) before, during and after repair or overhauling by using of modern diagnostic tools
- Testing of oil and air transformers
- Measuring of electric strength of liquid dielectric transformer oils
- Testing of tachogenerators, setting of centrifugal switches and measuring of dynamometer electric values
- Testing of aids and dielectric gloves
- Full – scale monitoring of crane operation and units
- Logic automat programming of type LOGO, ALFA etc.
- Setting of current, voltage, power and earth-fault protections and regulators
- Primary testing of turbo-generators (after repairs and after stop working)
- Electric values measuring acc. to customer requirements, electric cable measurement
- Voltage testing of electric cables up to 120 KV (SS)
- Determining of electric cable lines
- Fixing of technical faults by using of surge generator

MACHINERY

Workshop of repairs of electrical machines

- Machines for machining down (lathes, shapers, cutter, saw, drill)
- Balancer, puller 100 t
- Degreasing machine, oil purifier Micafluid

Coil winding shop

- Winders, presses, expander of the coil (round wire, profile, small coils)
- Woodworking machines
- Station for impregnation (boiler 2 m³)

Testing

- Dynamometer up to 100 kW, sets on lay-out of the line and troubleshooting cables
- Equipments for measuring of coils, windings (before and after repair), tester of oil Meger
- Device for adjusting of electrical protections in substations

Calibration test-room

- Kit of devices for calibrating instruments for measuring electrical quantities

Electrical installation

- Machines for sheet metal processing (shears, presses, saws, drills)
- Hydraulic kit for Cu and Al collection
- Tools and equipment for electrical work outside of the workshop

BUILDING PLANT

MAIN ACTIVITIES

- Erection of buildings for industrial, water management, environmental, agricultural, civil, housing construction, turnkey projects
- Loft conversion, insulation and renovation of, roof and roof construction, drywall
- Carpentry and scaffold work
- System formwork DOKA, machine plastering and classical rendering of all kinds
- Rehabilitation of reinforced concrete structures, wet masonry of complete buildings by certified systems
- Static secure of buildings, including the elaboration of projects
- Repairs and reconstruction of industrial floors
- Excavation work, foundation of reinforced concrete and steel structures
- locksmith work
- Electrical installations
- Air conditioning and engineering networks
- Assembled family and apartment houses
- Painting and glazing works, manufacture of furniture, woodwork
- Transport routes
- Consultancy, repairs, reconstruction of buildings
- Cargo transportation and mechanization

MACHINERY AND FACILITY

- Mixing Plant of type Teltomat (capacity 70 t/hour)
- Equipment for sheetmetal and locksmith manufacturing
- Building machines (finishers, road rollers, vibrating plates, cutting machines etc.)
- Tubular scaffolding, light mounting devices and towers
- High-pressure water jet
- Floor cutter and grinder on concrete
- JCB backhoe loader

REFRACTORY-BUILDING PLANT

MAIN ACTIVITIES

- Refractory works – repairs of blast furnaces
- Repairs of refractory linings of ladles, tundishes and pig iron receivers
- Converter repairs incl. the linings demolition, cleaning of noses and exchanges of tapping parts
- Repairs of boilers, heating furnaces, special boiler units incl. the guniting
- Checking of refractory linings, consultancy
- Excavation works, earthworks, demolishing works by using of impact hammer (carriage unit UDS211P)
- Repairs of lift trucks, carriages, load carriages and tractors

MACHINERY

- Single-purpose machine of type ROMAN 02 for demolishing of linings of pig iron receivers
- Machine Cat 325 Leonard for cleaning of noses and exchanges of tapping parts
- Lift trucks, tractors, machines for asphalt mixture laying, sweeper-flusher etc.
- Milling device for milling of refractory and concrete runners for blast furnaces
- Milling device for destroying of earth, sands etc.

DESIG & DEVELOPMENT DEPARTMENT

MAIN ACTIVITIES

- Engineering technology design
- Structures design
- Expert consulting services
- Detailed Engineering – processing of detailed manufacturing technical drawing of technological equipment and machine devices for metallurgy, rolling mills, finishing lines and devices
- Detailed Engineering – processing of detailed manufacturing technical drawings of structures (buildings, railway and road bridges)
- Preparing of technical drawings of repaired machines, technological lines and devices
- Preparing of technical drawings of cranes incl. the structures and suspension devices
- Development and design of single-purpose engineering appliances and complex engineering machines and devices incl. the electric, pneumatic and hydraulic parts
- Manufacturing of designed machines and equipment and customer service (Production Plant)
- Engineering strength calculations by Finite Element Method
- Space fully dimensional simulation
- Technical drawing digitization
- Reprographic services

SOFTWARE:

- AutoCad Inventor 2014 (space fully dimensional simulator program)
- AutoCad Mechanical 2014 (two dimensional Cad)
- Vise Image 2012 (tiff file settings – scanned drawings)
- ANSYS 14.0 – solving of complex linear and nonlinear problem solutions (with physics and geometry aspects) by Finite Element Method

Address:

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