The list of trun-key investment units acc. to customer requirements

1. Sintering plant
   - Sinter belts and handling cars
   - Shaking devices
   - Drum mills
   - Slag crushers
   - Stacker
   - Technology for increasing of metallic content of ferrous metal sows

2. Blast furnaces
   - Torpedo mixers
   - Ladle cars
   - Cooling staves
   - Skip cars incl. drives
   - Hot-blast stoves

3. Coking plant
   - Coke-oven batteries
   - Technology
     - Coke-quenching cars
     - Ramming machines
     - Guide cars
     - Handling carriages
   - Tar separators
   - Charging cars

4. Converter steel plant
   - Tundishes
   - Ladles
   - Three-way valves
   - Recuperators
   - Scrap-iron runners
   - Demolishing machines (destroying of linings)

5. Ingot teeming
   - Ingot moulds
   - Casting systems

6. Continuous casting
   - Arches for slab continuous casting
   - Ladle turrets
   - Oscillatory table of continuous casting
   - Outlet conveyors

7. Rolling mills
   - Conveyors and manipulators
   - Straightening presses
   - Grinding machines for grinding-out of surface defects of billets, blooms, blocks
   - Shears on cutting of billets and blocks
   - Straightening machines
   - Control lines for surface defects (crack detectors)
   - High-pressure descaling
   - Calibrated metallurgical rolls (hot rolled)
   - Cranes

   - Tube mills
     - Pilger rolls
     - Calibrated rolls
     - Pilger mandrels
     - Calibrating equipment
     - Heating furnaces
We offer a complex solution of industrial plants from design to the whole realization on turnkey.

**Project**
- Design, development and processing of drawings
- Professional software programs:
  - AutoCad Inventor 2015
  - AutoCad Mechanical 2015
  - Vise Image 2015
  - ANSYS 14.1

**Manufacturing**
- Complete production process:
  - preparation of materials (cutting, bending etc.)
  - welding
  - CNC machining
  - finishing (blasting, painting)
  - installation of hydraulic, pneumatic and electro
  - commissioning

**Building works**
- Project documentation
- Construction of the steel structure incl. cladding
- Subgrade and related engineering networks
- Roads
- Facility equipment with other technologies according to customer requirements (handling equipment, cranes, conveyors, etc.).

**Assembly**
- Commissioning and adjustment of functions
- Assembly acc. to the technical documentation in area:
  - elektric
  - hydraulic
  - pneumatic
  - mechanical

**Personnel training**
- Inform personnel about:
  - machine control
  - machine operation
  - basic maintenance

**Warranty and post-warranty service**
- The warranty on supplied unit
- Service with a proactive approach
Company Strojírny a stavby Třinec, a.s. offer you grinding machines for grinding-out of surface defects of billets, blooms, blocks and round blooms. This is an effective way to achieve a clean surface of the material before further processing.

**Material:**
- all rank of materials from 15. (steel, stainless steel, titanium, super-alloys)

Grinding is performed either surface-wide or locally according to the material quality or the occurrence of surface defects. Grinding include chamfering of grinded material.

**Types of grinding machines:**
- stationery grinding machine with mobile table
- mobile grinding machine with stationery table

**Working modes:**
- automatic – new line of grinding machines is offered in full automatic mode incl. defects surface control by profile laser
- semiautomatic – grinding of material surface - loading, unloading, turn over of grinding material and grinding of ends of edges by hand
- manual – all movements by hand

**Equipment of grinding machines:**
- grinding cart
- clamp
- loading and unloading rack
- equipment for primary separation of dust particles

### TECHNICAL DATA - GRINDING MACHINES FOR ROUND BLOOMS

#### Grinded material

<table>
<thead>
<tr>
<th>Type</th>
<th>Circurel section (mm)</th>
<th>Lenght (m)</th>
<th>Material grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round bloom</td>
<td>Ø150 - Ø500</td>
<td>3 - 12</td>
<td>up to breaking strength 1200 - 1300 MPa</td>
</tr>
</tbody>
</table>

#### Basic data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output of drive of grinding wheel spindle</td>
<td>250 kW</td>
</tr>
<tr>
<td>Grinded amount</td>
<td>7-10mm</td>
</tr>
<tr>
<td>Grinding table speed</td>
<td>0,5 - 10mm/min</td>
</tr>
<tr>
<td>Grinding wheel – outside diameter</td>
<td>610 mm</td>
</tr>
<tr>
<td>Material temperature</td>
<td>at ambient temperature (cold)</td>
</tr>
<tr>
<td>Pressure regulation</td>
<td>automatic (to avoid of excessive grinding)</td>
</tr>
<tr>
<td>Type of grinding</td>
<td>flexible (surfaces, edges or individual points)</td>
</tr>
</tbody>
</table>

#### Grinder output

- Billet 150 x 150 – 12m (all over surface grinding)
  - Number of billets per hour: 3
  - Productivity (t / hr.): 6,4 t

Technical parameters of grinding machine can be adjusted on customer requirements on parameters and rank of grinded material.

### REFERENCE: GRINDING MACHINE BBS 07, 09

#### Parameters of grinded material

<table>
<thead>
<tr>
<th>Material</th>
<th>steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Billet</td>
<td>min. 150 x 150 mm</td>
</tr>
<tr>
<td>Lenght</td>
<td>max. 12 000 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>3 100 kg</td>
</tr>
<tr>
<td>Curvature</td>
<td>max. 5 mm/m</td>
</tr>
</tbody>
</table>

* In case of higher curvature can grinding machine be complemented by straightening press.

We offer you the possibility of a reference visit on a plant with grinding machine for billets.