

ZRE Katowice S.A. PRODUCTION CENTER



Our branches:

- 1 Poland – Headquarters
(Katowice, Jaworzno, Warszawa, Ostrołęka, Rybnik, Wrocław, Łódź, Gdańsk, Płock, Kozienice)
- 2 Croatia



Subsidiary Companies:

- 1 ZRE Katowice Serwis Sp. z o.o.
- 2 Euroenergetika (Bosnia and Hercegovina)

Scope of provided services

Business areas



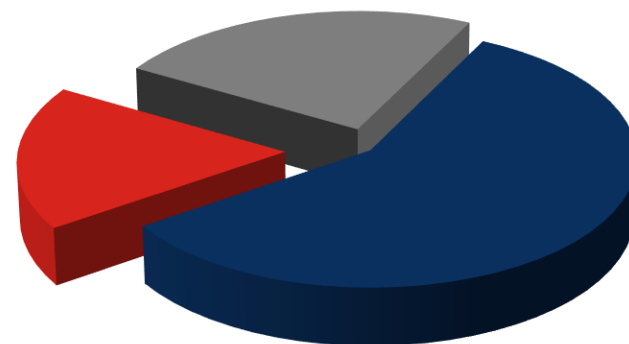
Production

- Machines constructions
- Pipelines prefabrication
- Railway rolling stock components
- Heat exchangers
- Offshore structures



Services

- Primary parts preparation
- Pipe bending
- Assembly and welding
- Heat treatment
- CNC machining
- Non-destructive and destructive testing
- Anticorrosion protection
- Transport



- Installation of new facilities
- Modernization, repairs, services
- Production

- **25.000 m²** of workshops area
- **350** qualified and professional employees (total 1.300)
- **6.000 tons / year** - Machines constructions
- **50.400 mh / year** - Large-scale machining with CNC machines
- **1 600 tons / year** - Pipelines prefabrication



Machines constructions

Machines constructions

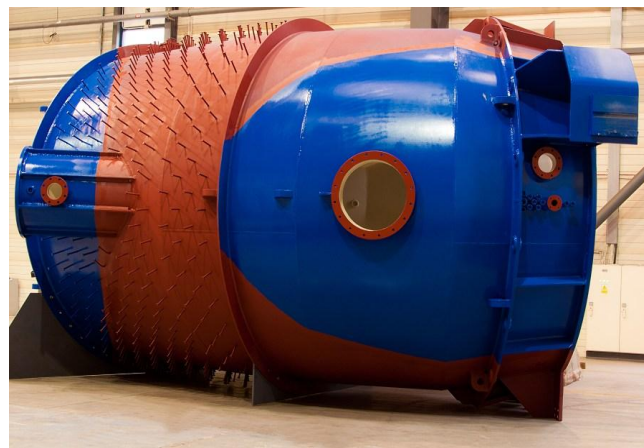
Construction machinery
structures – serial production

- ⚙ **Constructions weighing up to 80 tons**
- ⚙ **Production capacity: 3.000 tons per year**
- ⚙ **Thickness of welded sheets: up to 300 mm,**
- ⚙ **Fine-grained steels up to 240 mm**



Machines constructions

Construction machinery
structures – serial production

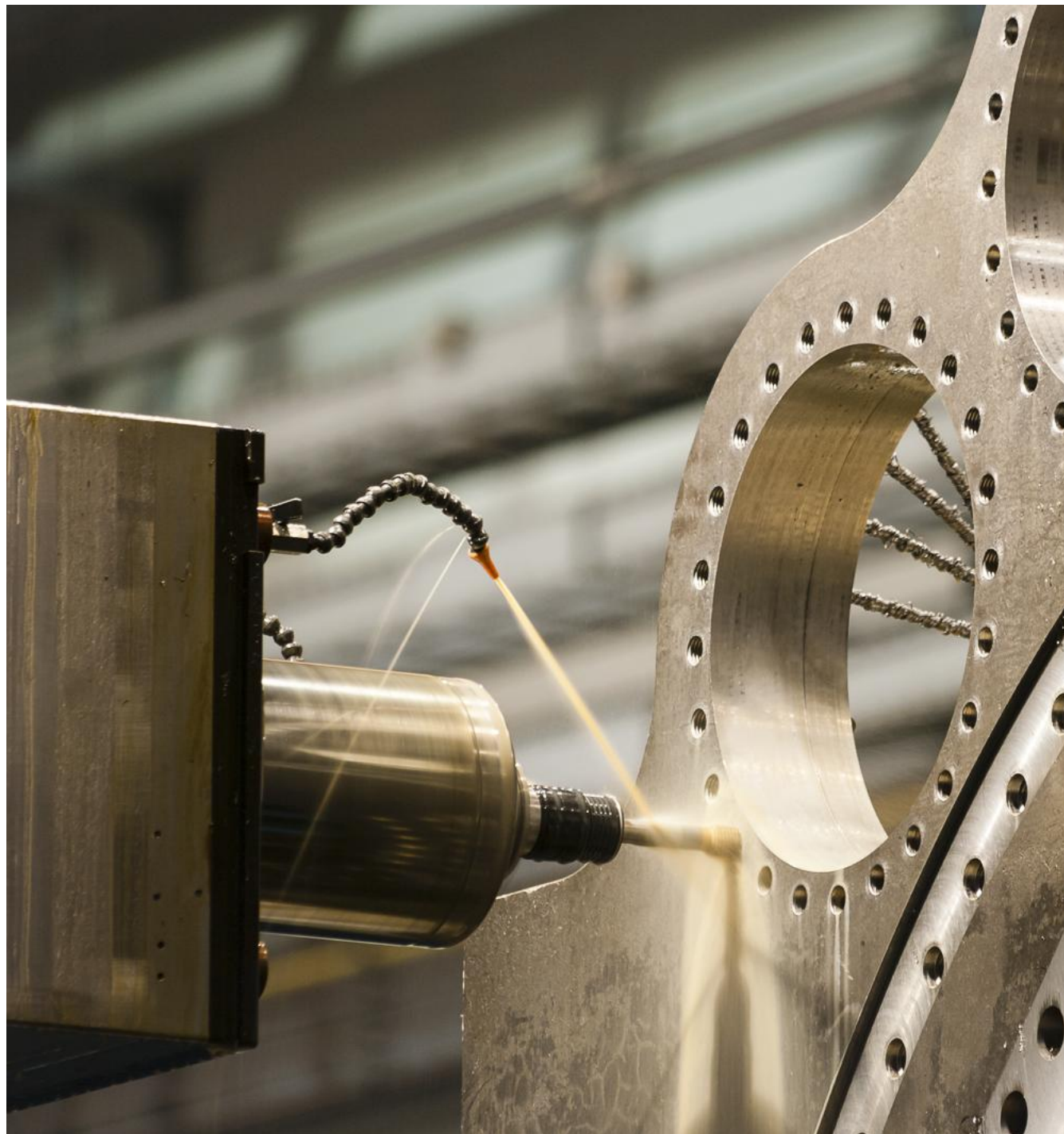


Large-scale CNC machining

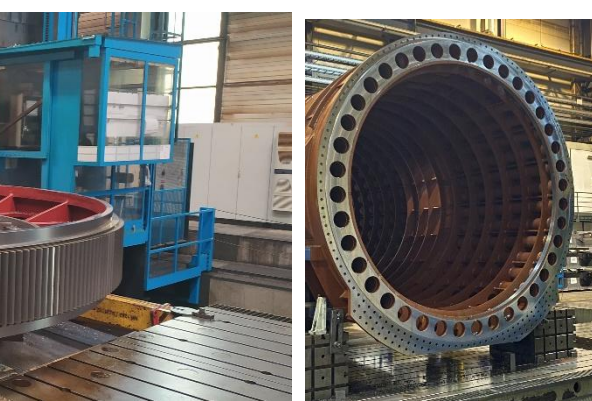
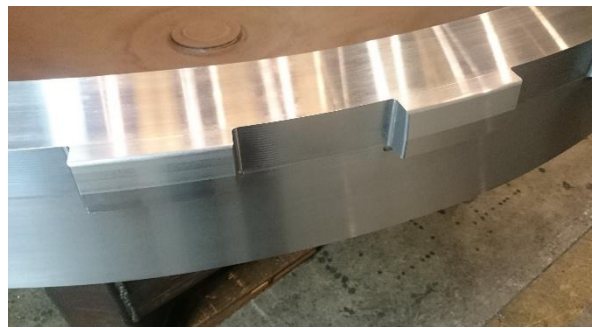
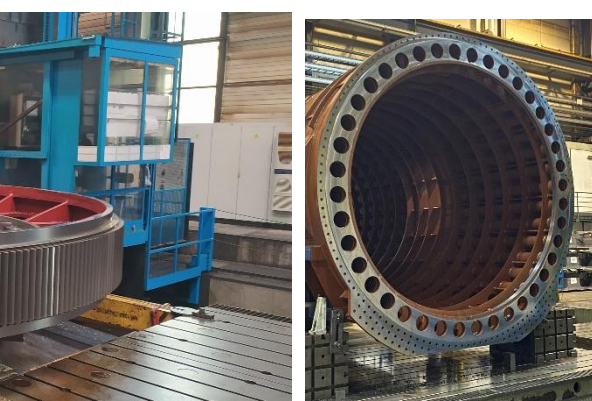
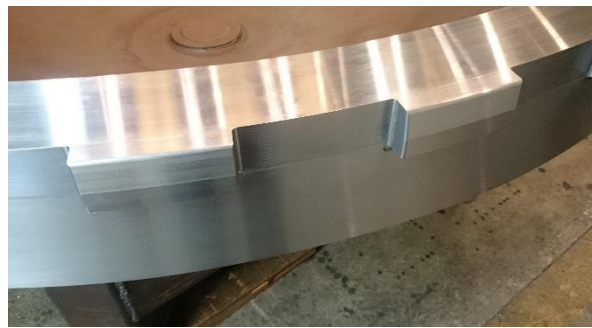
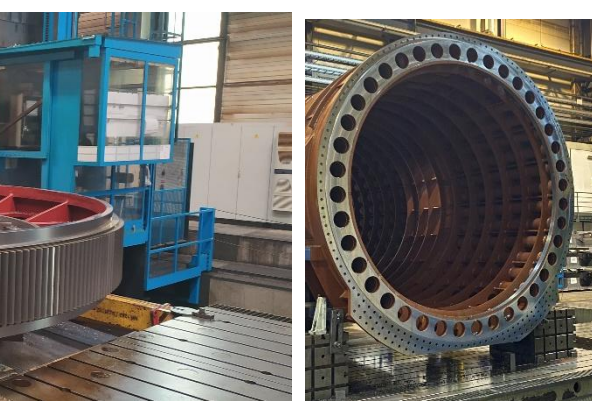
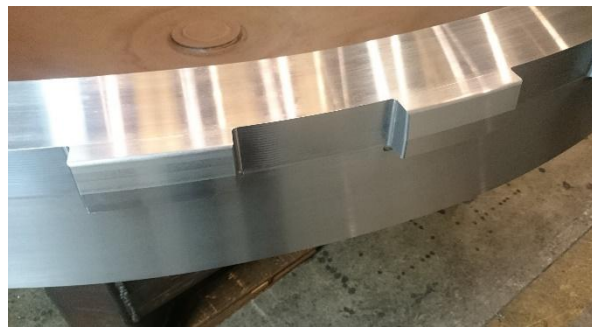
Large-scale CNC machining

Dimensions of processed components

- ⚙ **Maximum weight:**
100 tons
- ⚙ **Maximum lenght:**
21 000 mm
- ⚙ **Maximum widht:**
5 300 mm
- ⚙ **Maximum height:**
5 000 mm
- ⚙ **Maximum diameter:**
5 800 mm



Large-scale CNC machining



Special production

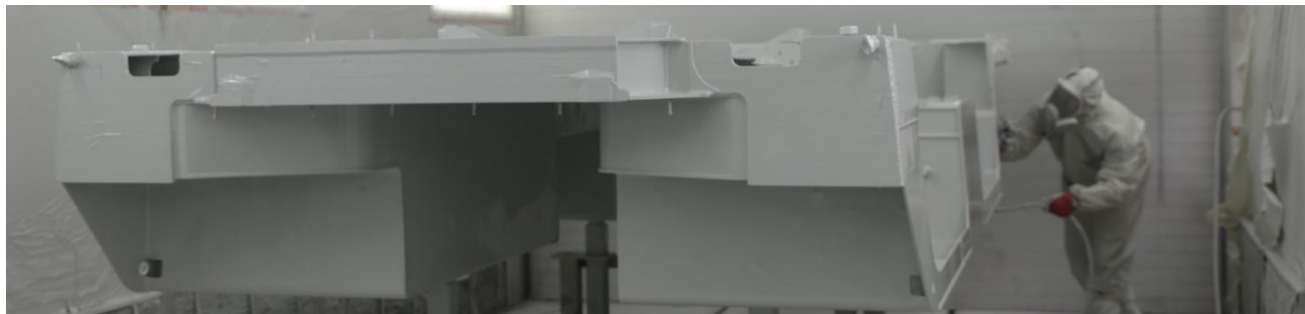
- Railway rolling stock components
- Heat exchangers
- Offshore

Railway Industry

Serial production

The scope of our work includes comprehensive execution of:

- ⚙ Purchase of materials
- ⚙ Assembly and welding with tooling
- ⚙ Straightening
- ⚙ Machining
- ⚙ Washing
- ⚙ Blasting
- ⚙ Painting and foam application
- ⚙ Transport



Heat exchangers

One-off production

Parameters of a sample heat exchanger:

- ⚙ Weight of exchanger: 54 tons
- ⚙ Dimensions: 6400 x 2500 (L/H).
- ⚙ Jacket diameter: Ø1500;
- ⚙ Siev chamber diameter: Ø1930 (Ø2400 with nozzles)
- ⚙ Thickness of jacket wall: 100mm

The heat exchangers were manufactured on the basis and subjected to the conformity assessment procedure by UDT-CERT against PED 2014/68 / EU including ASME sec.VIII DIV.2 and PN-EN 13445.

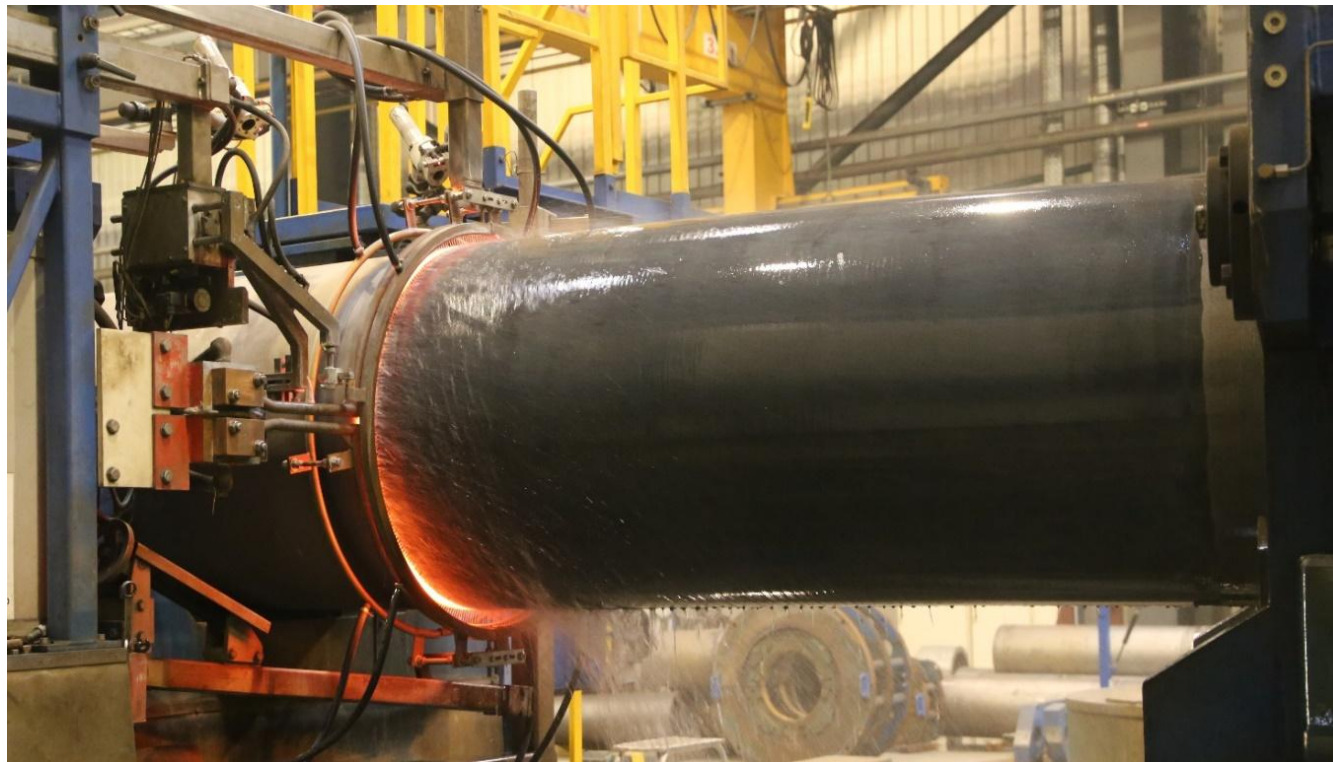


Pipelines prefabrication

Induction bending Cojafex PR1200

Basic induction bending machine parameters:

- ⚙ **Minimum diameter:**
 $D_{min} = 139,7 \text{ mm}$
- ⚙ **Maximum diameter:**
 $D_{max} = 1\,220 \text{ mm}$
- ⚙ **Minimum wall thickness:**
 $g_{min} = 5 \text{ mm}$
- ⚙ **Maximum wall thickness:**
 $g_{max} = 100 \text{ mm}$
- ⚙ **Maximum bending radius:**
 $R_{max} = 6\,400 \text{ mm}$
- ⚙ **Maximum bending angle:**
 $\alpha = 180^\circ$
- ⚙ **Bending in 3D system**



Cold bending of pipes Schwarz Robitec CNC220 HD

Basic cold bending machine parameters:

- ⚙ Minimum diameter:
 $D_{min} = 48,3 \text{ mm}$
- ⚙ Maximum diameter:
 $D_{max} = 219,1 \text{ mm}$
- ⚙ Maximum wall thickness:
 $g_{max} = 25 \text{ mm}$
- ⚙ Maximum bending radius:
 $R_{max} = 1\,100 \text{ mm}$
- ⚙ Maximum bending angle:
 $\alpha = 180^\circ$
- ⚙ Bending in 3D system



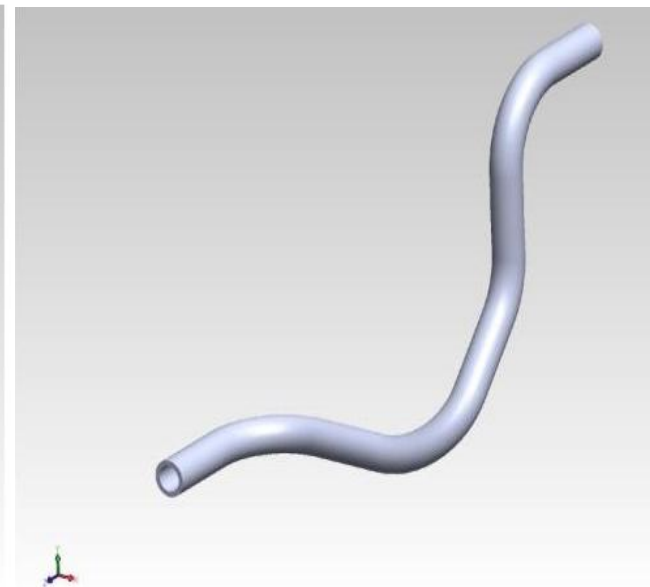
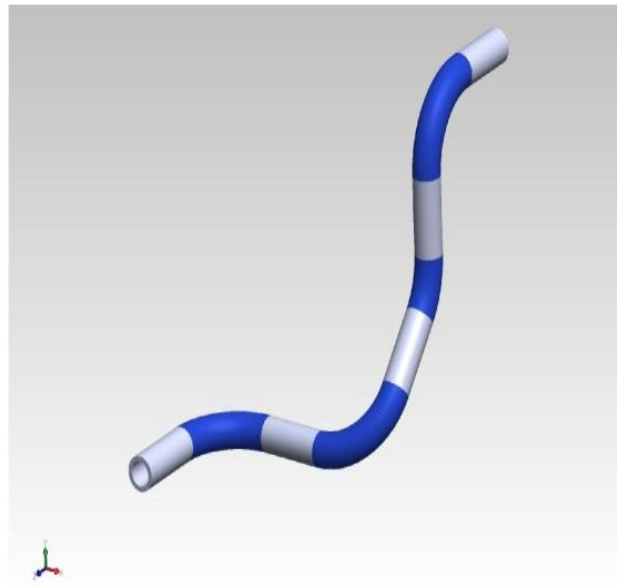
Bending in 3D system

Conventional method:

- ⚙ 4 additional bends
- ⚙ 5 sections of the pipeline
- ⚙ 18 operations of beveling ends
- ⚙ 8 additional welds
- ⚙ additional assembly and welding
- ⚙ additional weld testing
- ⚙ additional commissioning

Bending in 3D system:

- ⚙ 1 section of pipeline
- ⚙ 4 induction or cold bends
- ⚙ 2 operations of beveling welds ends
- ⚙ no additional welds
- ⚙ no weld inspection
- ⚙ commissioning in the workshop



Stages of pipeline prefabrication

- ⚙ Heat treatment
- ⚙ Welding
- ⚙ Shot blasting
- ⚙ Painting

Other processes:

- ⚙ Packing
- ⚙ Loading
- ⚙ Transport



Examples of realizations

