

# Supply of services

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## 1. Mechanical processing:

Our machine shop is equipped with various sizes of lathes and CNC milling and boring machines. We have a team of skilled technicians, craftsmen, machinists and engineers to perform all types of mechanical jobs.

With 4 overhead cranes with a capacities of 16 T (2 each) and 32T (2 each) at its disposal we can handle large parts with a hook height of 9 m.

6000 square meter production area allows us to assemble and fabricate large welding construction.

#### Milling cum boring machine

Manufacturer/type		TOS/WHN 13 CNC
Control unit:		Heidenhain 5 axes
Control type:		iTNC 530
Travel range:	Х	3500 mm
	Y	2500 mm
	Z	1600 mm
Table area:		1800 x 2200
Spindle diameter:		Sk50
Max. work piece wei	ght:	16 t

#### **Milling machine**

Manufacturer / type: Control unit: Control type: Travel range: X Y Z Table area: Spindle diameter: Max. work piece weight:

KUNZMANN WF600MC Heidenhain 3 axes iTNC 320 600 mm 400 mm 400 mm 800 x 400 Sk40 500 kg

#### **Turning machine**

Manufacturer/type:	TOS SU 150
Type of turning lathe:	centre
Face plate Ø:	1500 mm
Max. circumferential diameter:	1200/5000 lg
at working length	-

Manufacturer / type: Type of turning lathe: Face plate Ø: Max. circumferential diameter: at working length TRENS SN 500 SA centre 550 mm 270/2000 lg









# 2. Cutting and flame cutting jobs:

Our cutting department is equipped with various types of oxy fuel cutting machines and heavy duty band saws. Our machines boast the latest technology and are able to eliminate minute errors so that the output is of the highest quality and at the highest speed possible. We have a gantry cutting machine with a bed size of 12m/4.3m and also a pipe profil cutting machine with 5 axis control with we can cut any shape in pipes from  $\emptyset$ 200 mm to 2000 x 11600m long.

#### CNC template flame cutter, type Zinser (2 burners)

Travel	range:
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Х	12000 mm
Υ	4300 mm
Ζ	150 mm
	32 000 kg





Travel range: Max. component weight:

Max. component weight:

ø 200 - 2000 mm 11600 mm 2 x roller block 10 t each → 20000 kg



# Automatic band saw

Manufacturer: MEBA ECO 510 DGA Diameter: Ø up to 510 mm Band saw with NC automatic feed and mitre capacity of 30° - 135°





## 3. Rolling

We have two hydraulic plate rolling machines with various ranges made by Haeusler, Germany. The three-roll bending machine allows both: first the bottom rolls to move individually horizontally and second the top rolls to move vertically so that individual angling is possible for conical rolling. It offers various advantages over other solutions in terms of minimizing flat ends, bending precision and work piece handling. It can bend steel plates up to 100mm thick and 3m long.

The four-roller bending machine can process plates up to 60mm thick and 2m long, a detailed specification can be found below.

#### Haeusler HDR 4400-1600

Manufacturer / type:Haeusler HIMachine type:3-rollMax. plate width:4400 mmDiameter range:600 to unlimPlate thickness for bending up to:10-100 mmSpecial features:NC-controlle

Haeusler HDR 4400-1600 3-roll 4400 mm 600 to unlimited mm 10-100 mm NC-controlled machine

Other thicknesses & diameters available on request. Particularly suitable for bending cylindrical and conical parts.



#### Haeusler VRM 271

Manufacturer / type:HaeuslerMachine type:4-rollMax. plate width:2200 mmDiameter range:400 to unlPlate thickness for bending up to:5-60 mmSpecial features:NC-contr

Haeusler VRM 271 4-roll 2200 mm 400 to unlimited mm 5-60 mm NC-controlled machine

Other thicknesses & diameters available on request. Particularly suitable for bending cylindrical and conical parts.





## 4. Welding

Welding according to DIN, ASME Boiler and Pressure Vessel Code Sect. IX. Welding certificates from TUV, Lloyd's Register, Bureau Veritas, Det Norske Veritas and others. There are WPQRs for nearly all prepared materials, welding processes, weld shapes and dimensions. Additional process tests are always possible.

- qualification of welders according to EN 287 and ASME IX
- approval of welding procedures in accordance with EN 15614 and ASME IX
- manual welding stations
- various types of welding equipment for the following welding processes:
  - manual arc welding -E-(111)
  - metal inert gas welding -MIG-(131)
  - metal active gas welding -MAG- (135)
  - tungsten inert gas welding -WIG- (141)

• Automatic submerged arc welding machine carrier for circumferential and longitudinal welds:

longitudinal welds up to 4.500 lg circumferential welds up to ø 5.000 welding turntables from 150 – 6.000 kg load-bearing capacity welding roller bock up to 60.000 kg load-bearing capacity





#### 5. Annealing Furnace:

For stress-relief annealing, soft annealing, normalizing and tempering.

Manufacturer / type: Table width: Table length: Loading height: Max. weight: Max. weight per part: Max. temp: Andritz Maerz 3.000 mm 14.000 mm 3.000 mm 50 t 50 t 1.000 °C ±5 °C\*



#### **Surface treatment**

Sandblasting rust removal in our large-capacity blasting room, also sand blasting for stainless steel and duplex steel. According to ISO 8503, SA2.5. Processing space (tempered), processing and testing facilities.

Painting & varnishing: various coatings on request Shot blasting room Intermediate space width 5.500 mm Intermediate space height 5.000 mm length 16.000 mm





#### 6. Material testing laboratory

Our material testing lab is equipped with a wide range of testing equipment such as the pendulum impact test machine (Charpy), hardness testing devices, universal testing devices: testing machines for tensile and bending specimens. Forces of up to 400KN. Bending test, side bends, root bend, tensile test. Grinding devices for micro-and macro sections, equipment for chemical etching. Testing equipment / test methods

- X-ray devices, up to 320 kV, (direct beam and omnidirectional beam devices)
- Ultrasonic test devices
- Magnetic particle and colour penetration test
- Electrical test devices for breakdown tests of up to 20,000 volts
- Pressure test fixtures and equipment for pressure tests of up to 750 bar positive and negative pressure tests
- Corrosion tests, such as:
  - o coating thickness tests
  - o adhesion tests
  - o cross-section tests
  - o pore tests of up to 30 kV
- A material testing laboratory with extensive equipment for destructive and non-destructive tests, such as:
  - o tensile tests
  - o impact test
  - o bending tests
  - o macro-photography
  - o hardness tests (HB, HV, HR)
  - o macro-examinations
  - o own testing workshop
- Personnel certification in non-destructive testing (NDT) according to EN 473 and ISO 17635