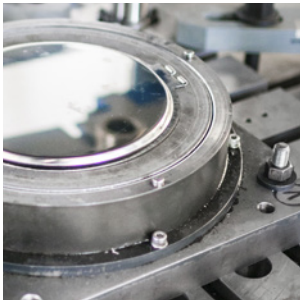
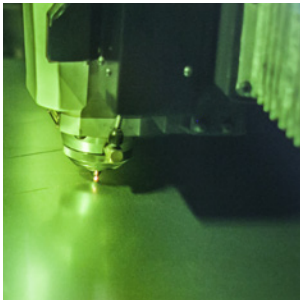
darco






DARCO **cooperation offer**

**Darco in numbers:**
We employ about **300** people.
Every year we process more than **3000** tones of different kinds of steel.
Our production and warehouse spaces sums to more than **20 000** square metres of area.
Main warehouse has capacity of over **8000** pallets.


Darco is a leading manufacturer of chimney and ventilation systems, it is definitely the biggest producer of chimney cowls, hot air distribution systems and 2 mm mild steel chimney connections in Poland.
Company's success could be reached only by using most advanced techniques and solutions, that allow to produce high quality products, both safe and effective, at competitive prices.
Product creation process is made with the usage of modern CAD applications, accompanied by detailed tests and trials in the company lab, the R&D department as well as in third party Institutes.

All the materials used meet highest quality demands, are always first grade and their characteristics are proven with proper certificates.
Our machine park is well developed. Metal processing is made on modern, new-generation CNC machines, that assure highest precision, speed, as well as cost - effective production.
Final treatment and mounting is made also on devices designed and manufactured by ourselves. Some operations are fully robotized.

All processes are made following the ISO 9001:2008 norm, proved by proper certificate.

Thanks to almost 25 years in the business we have quite an experience in metal forming. Long tradition does not mean old fashioned technologies of course. To give an example, Darco owns most sophisticated Automated Sheet Metal Punching/Laser Cutting Working Cell - with more than 300 pallet storage system. Such devices allow us to give You services at highest possible level.

**Materials on stock:**

Darco produces both with the usage of its own or from the customer's material. On running stock we have wide assortment of mild steel, galvanized steel, stainless and aluminum materials.

- mild steel:
  - type DC01 of thicknesses 0,5 ÷ 2,5 mm
  - type S235JRG2 of thicknesses 2,5 ÷ 5,0 mm
- stainless steel:
  - type 1.4301 of thicknesses 0,5 ÷ 5,0 mm (also brushed - 4N-type surface)
  - type 1.4404 of thicknesses 0,5 ÷ 1,0 mm
  - type 1.4828 of thicknesses 0,8 ÷ 2,0 mm
- galvanized steel of thicknesses 0,5 ÷ 2,0 mm
- aluminum of thicknesses 0,5 ÷ 3,0 mm
- mild steel rods, stainless steel rods
- flat bars, closed profiles made with mild and stainless steel
- components made with special materials like copper, brass and plastics and many others

# 1. Material preparation.

**Automatic cut-to-length lines.**

| | Width | Material thickness | Cutting length |
|---|---|---|---|
| I | 1250 mm | 2,0 mm | max. 2,5 m + material slitting in option |
| II | 1500 mm | 3,0 mm | max. 3 m |

**CNC Shears.**

| | Cutting length | Material thickness | Cutting accuracy |
|---|---|---|---|
| I | 2000 mm | 2,0 mm | +/- 0,3 mm |
| II | 3000 mm | 2,0 mm | |

# 2. Preliminary operations. LASER CUTTING AND PUNCHING.

**2D Amada FOL Fiber 2kW Laser Cutting Machine (with auto loading/unloading system).**

| | |
|---|---|
| Types of materials | mild steel, stainless steel, galvanized steel, aluminum, copper, brass |
| Thicknesses of materials cut | 0,5 mm ÷ 3 mm |
| Measurements of material processed | 1500 x 3000 mm |
| Cutting accuracy | +/-0,1 mm |

*„Fiber" cutting technology compared to traditional CO2 lasers enables higher cutting speed, more precision as well as better quality (less material damages caused by high temperatures).*

**2D CO2 LVD 4kW Laser Cutting Machine.**

| | |
|---|---|
| Types of materials | mild steel, stainless steel, galvanized steel, aluminum |
| Thicknesses of materials cut | 0,5 mm ÷ 5,0 mm |
| Measurements of material processed | 1500 x 3000 mm |
| Cutting accuracy | +/- 0,1 mm |

## AMADA AC 2510 NT Punch Press.

| | |
|---|---|
| Types of materials | mild steel, stainless steel, galvanized steel, etc. |
| Thicknesses of materials processed | 0,5 ÷ 2,0 mm |
| Measurements of material processed | 2500 x 1270 mm |
| Positioning accuracy | +/- 0,1 mm |

## Automated Punching Press Working Cell with storage (AMADA EM 3612 ZRT with tool changer).

| | |
|---|---|
| Types of materials | mild steel, stainless steel, galvanized steel, aluminum |
| Thicknesses of materials processed | max. 3,0 mm |
| Measurements of material processed | 1500 x 3000 mm |
| Positioning accuracy | +/- 0,1 mm |

**Amada VQC-1220 Optical measuring machine.**

| | |
|---|---|
| Working area | 3000 x 1250 mm ≠ 3,0mm |
| Measurement accuracy | 50 µm |

*VQC-1220 Optical measuring machine is a device designed to verify the accuracy of punching/cutting operations by comparing the scanned image of a real made product with its CAD drawing.*


## 3A. Main operations. BENDING.

| | |
|---|---|
| **AMADA ASTRO 100NT Bending cell** | for automated bending with a servo-electric press brake bending length - 3 m, pressing force - 100 t **(2 robots)** |
| **GASPARINI Robotized bending cell** | automated bending cell for pieces of up to 1,3 m length. pressing force - 45 t **(1 robot)** |
| **GASPARINI Press brakes** | CNC, hydraulic. max bending lengths: 2,5 m; 1,6 m and pressing force of: 75 t |
| **BYSTRONIC Servo-electric press brakes** | bending length of 2 m and pressing force of 80 t **(2 pcs)** |


*Fot. CELA AMADA ASTRO 100NT*

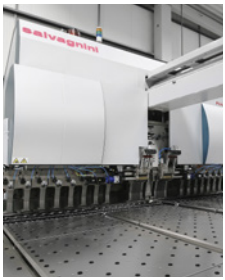
# 3B. Main operations. AUTOMATIC BENDING.

### Salvagnini P4 (P4Xe-3125) panel bender.

| | |
|---|---|
| Thickness | 3,0 mm / mild steel*<br>2,0 mm / stainless steel*<br>4,0 mm / aluminum* |
| Length | 330 ÷ 3100 mm* |
| Width | 155 ÷ 1524 mm |
| Max. diagonal | 3500 mm |

** depends on the processed piece*

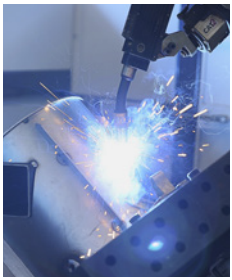
*This device is designed for fully automatic bending of sheet metal products. It assures highest possible efficiency thanks to automated tools repositioning. It also gives possibility of making unique shapes and bends thanks to the innovative working method.*

### MIG/TIG robotized welding cell.

| | |
|---|---|
| Max. measurements of the unit to be welded | 800 x 800 x 800 mm* |

** depends on the processed piece*




## 3D Cutting cell with 1kW laser.

| | |
|---|---|
| Max. measurements of element processed | 600 x 600 x 800 mm* |
| Max. thickness of material to cut | 2,0 mm |

** sizes may vary depending on certain product*

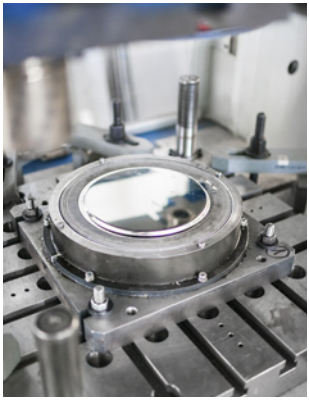

## Others

| | |
|---|---|
| **3D Plasma cutting machines for pipe cutting** | max. diameter of element processed: 600 mm<br>max. length of element processed: 1500 mm<br>max. cutting thickness: 2,0 mm |
| **Semi-automatic linear welders** | max. length of welded element: 1000 mm<br>max. thickness of welded element: 3,0 mm<br>max. diameter of welded element: ø 500 |
| **CEMSA linear spotwelding machines (with copper wire)** | materials to weld: mild steel and galvanized steel<br>max. length of welded element: 1000 mm<br>max. thickness of welded element: 1,0 mm<br>max. diameter of welded element: ø 500 |
| **Automatic 2-roll bender** | max. thickness of material: 4,0 mm<br>(up to 1000 mm in width) |
| **Expanding and shrinking machines for pipe-end forming** | max. thickness of material: 3,0 mm<br>expanding / shrinking height: 60 mm/50 mm<br>expansion scale - depends on material thickness and type (up to 50 mm) |

# 3C. Main operations. DEEP DRAWING.

**Hydraulic CNC press.**

| | OMERA I | OMERA II |
|---|---|---|
| Max. pressing force | 250 t | 80 t |
| Max. cushion force | 160 t | 30 t |
| Working area | 1000 x 800 mm | 600 x 450 mm |

# 3D. Main operations. SPINNING.

**CNC ZENN 800 Spinning Machine.**

| | |
|---|---|
| Max. diameter of element spinned | 800 mm |
| Max. thickness of material | 2,0 mm |


## 3E. Main operations. LATHES.

| | | | |
|---|---|---|---|
| I | **CNC Lathe** | max. diameter of element: ø 300<br>distance between spindle and tail stock: ø 52 | 1 pcs |
| II | **CNC Automatic Lathes** | max. diameter of element: ø 38 | 3 pcs |

## 3F. Main operations. MILLING AND TURNING.

**MAZAK VARIAXIS i-700T 5-axis machining center.**

| | |
|---|---|
| Max. diameter of processed piece | 850 mm |
| Max. height of processed piece | 500 mm |
| Max. weight of processed piece | 600 kg |

## 4. Manual operations.

- **TIG, MIG manual welders**
- **spot welding machines (max. thickness of material to be welded: 2,0 mm)**
- **hydraulic and pneumatic presses**
- **pneumatic riveting machines**

## 5. Surface treatment.

- **Sand blasting**
- **Phosphate treatment**
- **Powder coating:**

| | | |
|---|---|---|
| **I** | **Automatic line** | max. measurements of element painted: 800 x 600 x 1000 mm |
| **II** | **Manual line** | max. measurements of element painted: 1400 x 1000 x 800 mm |

*Darco owns two powder coating lines, including fully automatic one for high volume production. On running stock we have large variety of coats, what allows quick delivery times. What is also important, we also are working with silicone-based powder coats, that are used for production of components of high temperature resistance (450 ◦C).*

- **Wet painting (including water based paints) with robotized cell:**

*As part of our standard production we use wet painting with high-temperature Senotherm coats. In this case we also own 2 lines, one automatic with a robotized cell and one manual.*

| | | |
|---|---|---|
| **I** | **Automatic line** | max. measurements of element painted: ø 250 x 1000 mm |
| **II** | **Manual line** | max. measurements of element painted: ø 300 x 1000 mm |

Our company is created by many people, passionate at what they do. Darco innovations are sometimes establishing new paths in the HVAC market. Over 60 of our solutions have been protected, some have been granted a Patent. We are happy to be key suppliers of many companies from Poland and other countries, so we can share our knowledge and experience with them. We guarantee highest quality of service and good delivery times.

We are open to all suggestions and remarks,

Your satisfaction is our priority.

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