

# MACHINERY

*MOL*

## LASER CUTTING MACHINES

### 1 CNC LASER TRUMPFL6050

- Automatic pallet changer
- Maximum thickness (steel) : 25 mm
- Maximum thickness (inox) : 20 mm
- Maximum thickness (aluminium) : 15 mm
- Accuracy :  $\pm 0,2$  mm
- Laser capacity : 6000 W
- Maximum dimensions : 6000 x 2000 mm

### 2 CNC LASER LVD IMPULS 3020

- Automatic pallet changer
- Maximum thickness (steel) : 15 mm
- Accuracy :  $\pm 0,2$  mm
- Laser capacity : 3000 W
- Maximum dimensions : 3000 x 2000 mm

### 1 CNC LASER LVD IMPULS 6020

- Automatic pallet changer
- Maximum thickness
  - a) steel : 20 mm
  - b) stainless steel : 20 mm
  - c) aluminium : 15 mm
- Accuracy :  $\pm 0,2$  mm
- Laser capacity : 6000 W
- Maximum dimensions : 6000 x 2000 mm

<b>CUTTING TABLE (CNC)</b>
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**1 CUTTING TABLE CNC SAFX TOME 60**

- Number of jaws	:	6
- Maximum dimensions	:	5800 x 20000
- Maximum thickness	:	150 mm

**1 CUTTING TABLE CNC MESSER GRIESHEIM**

- Number of jaws	:	4
- Maximum dimensions	:	5000 x 8000
- Maximum thickness	:	150 mm
- Equipped with 2 chamfering jaws		

<b>BENDING MACHINES (CNC)</b>
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**2 BENDING MACHINES CNC LVD PPNMZ600/60**

- Maximum capacity	:	600 tons
- Maximum length	:	6000 mm
- Possibility of tandem coupling - total length	:	12000 mm

**1 BENDING MACHINE LVD PPEB 320/30 CAD CNC**

- Maximum capacity	:	320 tons
- Maximum length	:	3000 mm

**1 BENDING MACHINE CNC LVD PPEB/EFL 100/3050**

- Maximum capacity	:	110 tons
- Maximum length	:	3050 mm
- Easy form measuring system		

**SAWING MACHINES (CNC)****1 SAWINGMACHINE WITH DRILL KALTENBACH**

- Drill diameter : 8 – 50 mm
- Revolutions : 225 – 900 rev/min
- Saw capacity : round dia. 440 mm  
square 400 mm  
rectangular 800 x 290 mm  
profile 1000 x 300 mm

**CHAMFER****1 CHAMFERING MACHINE BERTHIEZ**

- Dimensions of work space : Y 1800 mm  
X 6000 mm
- Displacements : Y 2100 mm  
X 5500 mm  
Z 1400 mm

<b>WELDING</b>
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**2 WELDING ROBOTS CLOOS ROMAT 76**

- Displacement along X-axis : 10000 mm
- 7-Axles welding robot with seam detection and follow-up facility
- Maximum diameter : ca. 3600 mm
- Maximum height : ca. 2600 mm
- Welding machine capacity : 400 A
- Movable positioning tables

**1 WELDING ROBOT CLOOS ROMAT 310 (tandem)**

- Displacement along X-axis : 5000 mm
- 9-Axles welding robot with seam detection and follow-up facility
- Maximum diameter : ca. 3600 mm
- Maximum height : ca. 2600 mm
- Welding machine capacity : 2 x 500 A
- Movable positioning tables

**1 WELDING ROBOT (CELL) CLOOS 320**

- Type Z6
- Welding machine capacity : 500 A
- 9-Axles programmable welding robot with seam detection and follow-up facility
- Movable positioning tables (programmable)

**WELDING ROBOT CLOOS 410**

- Displacement along X-axis : 10000 mm
- 7-Axles welding robot with seam detection and follow-up facility
- Maximum diameter : ca. 3600 mm
- Maximum height : ca. 2600 mm
- Welding machine capacity : 500 A
- Movable positioning tables

**WELDING ROBOT CLOOS ROMAT 310 (tandem)**

- Displacement along X-axis : 16000 mm
- 9-Axles welding robot with seam detection and follow-up facility
- Maximum diameter : ca. 6000 mm
- Maximum height : ca. 4000 mm
- Welding machine capacity : 2 x 500 A
- Movable positioning tables (programmable)

**HEAVY DUTY PRESSES****1 DOUBLE EFFECT DEEP DRAWING HYDRAULIC PRESS**

- Capacity	:	750 tons
- Free Height	:	1500 mm
- Workspace	:	1920 x 1500

<b>MEASURING EQUIPMENT</b>
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**1 3D MEASURING MACHINE MORA 3 TYPE 0199**

X 3300 mm  
Y 1385 mm  
Z 1600 mm

<b>CUTTING</b>
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**4 PLATE SHEARS LVD**

- Capacity : sheet metal 12 mm in mild steel : max. 6000 mm
- Capacity : sheet metal 20 mm in mild steel : max. 3000 mm
- Larger cutting lengths possible

**1 PLATE SHEAR HACO TS3012**

- Maximum length of the cutter : 3000 mm
- Cutting capacity : 12 mm

<b>SURFACE TREATMENT - FINISHING</b>
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**SHOT BLASTING**

- Shot blasting of plates and profiles : max. width 2,5 m
- Possibility of automatic corrosion-treatment with weldingprimer or other primer

**PAINTING LINE**

- Maximum dimensions : 1900 x 2600 mm
- Maximum load/carriage : 400 kg
- Velocity : 10 tons/h
- Quantity per hour (sheet metal) :  $\pm 400 \text{ m}^2$
- 2 work spaces
  - a) Pre-treatment zone (degreasing, fosfating, rinsing, drying)
  - b) Spray paint zone (different possibilities)
- Dryingzone till  $\pm 140^\circ\text{C}$  possible after every zone, depending on demands

**SPRAYING BOOTHS WITH DRYING OVEN TILL  $80^\circ\text{C}$** 

- 4 cabins - dimensions : 18 x 6 x 5 m (L-W-H)
- 2 cabins - dimensions : 10 x 5 x 5 m (L-W-H)
- Synthetic - 2 components

**RMC****TURNING MACHINES****2 CNC MAZAK M5/SLANT TURN 30**

- Maximum diameter : 330 mm
- Maximum length : 3000 mm

**2 CNC MAZAK SLANT TURN 50 N**

- Maximum diameter : 805 mm
- Maximum length : 1500 mm

**1 CNC TAKISAWAH TC3**

- Maximum diameter : 230 mm
- Maximum length : 810 mm

**2 CNC TAKISAWAH TC4**

- Maximum diameter : 450 mm
- Maximum length : 1020 mm

**3 CNC JOHNFORD TC35**

- Maximum diameter : 580/230 mm
- Maximum length : 810 mm

**1 CNC JOHNFORD TC65**

- Maximum diameter : 720/500 mm
- Maximum length : 1710 mm

**2 CNC FRORIEP (VERTICAL)**

- Maximum diameter : 1400 mm
- Maximum length : 1000 mm

**1 CNC TOS HULIN SKS 12 (VERTICAL TURNING/MACHINING CENTER)**

- Maximum diameter : 1400 mm
- Maximum height of workpiece : 1750 mm
- Number of pallets : 2
- Number of tools : 38

**1 CNC RAFAMET**

- With NUM-720 :
- Maximum diameter : 3000 mm
- Maximum length : 2500 mm

**1 POREBA (CONVENTIONAL)**

- Maximum diameter : 1000 mm
- Maximum length : 6000 mm

**3 DEMOOR/MONDIALE (CONVENTIONAL)**

- Maximum diameter : 420 mm
- Maximum length : 3000 mm

**DRILLINGMACHINES/ BORING AND MILLING MACHINES****2 RADIAL DRILLING MACHINES (CONVENTIONAL)**

- Displacements : 1000 x 1500 mm

**1 SURFACE LATHE SACEM (CONVENTIONAL)**

- Displacements : X 4500 mm  
Y 2000 mm  
Z 300 mm  
W 900 mm

**1 CNC SURFACE LATHE WITH TOOL-CHANGER TOS WHQ13**

- With numeric control HEIDENHAIN TNC415	:	X 3500 mm
- Displacements	:	Y 2000 mm
		Z 1250 mm
		W 800 mm
- Number of tools	:	60

**1 CNC SURFACE LATHE TOS WH10NC**

- With numeric control TNC407	:	X 1250 mm
- Displacements	:	Y 1120 mm
		Z 940 mm
		W 630 mm

**MILLING MACHINES****1 TOS FGS 50/63 (CONVENTIONAL)**

- Displacements	:	X 1400 mm
		Y 600 mm
		Z 500 mm

**CNC MACHINING CENTERS****1 MAZAK (VERTICAL)**

- Displacements	:	X 1500 mm
		Y 750 mm
		Z 750 mm
- Number of tools	:	20

**2 CINCINNATI SABRE (VERTICAL)**

- Displacements	:	X 762 mm
		Y 381 mm
		Z 508 mm
- Number of tools	:	21

**2 UNISIGN (VERTICAL)**

- With numeric control SIEMENS	:	X 3400 mm
- Displacements	:	Y 535 mm
		Z 200 mm
- Number of tools	:	40

**1 UNISIGN UNIVERS6 (VERTICAL)**

- With numeric control HEIDENHAIN TNC 430
- Displacements : X 6000 mm  
Y 800 mm  
Z 600 mm
- Number of tools : 52

**1 JOHNFORD (VERTICAL)**

- With numeric control FANUC 15M and indexing table NIKEN
- Displacements : X 1300 mm  
Y 610 mm  
Z 850 mm
- Number of tools : 24

**1 ZAYER KFU 12.000 (HORIZONTAL)**

- With indexing milling head
- Displacements : X 12000 mm  
Y 2500 mm  
Z 1100mm
- Number of tools : 63

**2 OLIVETTI HORIZON 1003/1005 (HORIZONTAL)**

- With driven rotating table
- Displacements : X 1900 mm  
Y 1400 mm  
Z 1400 mm
- Number of tools : 80

**1 MAZAK H25Q (HORIZONTAL)**

- With driven rotating table
- Displacements : X 5080 mm  
Y 1525 mm  
Z 915 mm  
J 380 mm
- Number of Tools : 40

**2 MAZAK H630 (HORIZONTAL)**

- With pallet changer
- Displacements : X 1000 mm  
Y 850 mm  
Z 950 mm
- Number of tools : 120
- Number of pallets : 6

**1 MAZAK FH-880 (HORIZONTAL)**

- With driven rotating table
- With pallet changer : 800 x 800 mm
- Displacements : X 1300 mm  
Y 1100 mm  
Z 1000 mm
- Number of tools : 120
- Number of pallets : 2

**1 MANDELLI 5 hp (HORIZONTAL)**

- With driven table and SIEMENS 840D
- displacements : X 800 mm  
Y 650 mm  
Z 750 mm
- Number of tools : 100
- Number of pallets : 4

**4 MANDELLI STORM 1400/1900/2500 (HORIZONTAL)**

- With driven table and SIEMENS 840D
- Displacements : X 1600/2100/2600  
Y 1500 mm  
Z 1800 mm
- Number of tools : 100
- Number of pallets : 2

**2 MANDELLI SPARK 2100****(starting sept. 2008)**

- With driven table and SIEMENS 840D
- Displacements : X 2000 mm  
Y 1700 mm  
Z 1800 mm
- Number of tools : 208
- Number of pallets : 2

**2 SHW – UFZ6L (HORIZONTAL)**

- With indexing milling head (octagonal)
- Displacements : X 10 000-12 000 mm  
Y 2800 mm  
Z 1500 mm
- Number of tools : 66

**4 SHW UNIFORCE 6 (Horizontal)**

- With indexing milling head (octagonal)
- With 2 driven turning tables and Heidenhain 530
- Displacements : X 10000 mm  
Y 2800 mm  
Z 1600 mm
- Number of tools : 120

**1 SHW UNIFORCE 6 (horizontal)****(starting dec. 2008)**

- With indexing milling head (octagonal)
- With 2 driven turning tables and Heidenhain 530
- Displacements : X 10000 mm  
Y 3100 mm  
Z 1600 mm
- Number of tools : 160

**2 SHW PS5**

- With indexing milling head (octagonal)
- With 2 driven turning tables and Heidenhain 530
- Displacements : X 6000 mm  
Y 2100 mm  
Z 1300 mm
- Number of tools : 120

<b>FINISHING – SURFACE TREATMENT</b>
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**1 INDUCTION HARDENING MACHINE (MID-FREQUENCY)**

- |                    |   |         |
|--------------------|---|---------|
| - Maximum diameter | : | 400 mm  |
| - Maximum length   | : | 1400 mm |

**3 WASHING PLANTS**

- |                             |   |                    |
|-----------------------------|---|--------------------|
| - Capacity                  | : | 1100 l             |
| - Maximum size of workpiece | : | 500 x 1000 mm      |
|                             |   | Dia. 1175 x 750 mm |

<b>SPECIALTIES</b>
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**1 PULL BROACHING UNIT HONEMA**

- |                          |   |         |
|--------------------------|---|---------|
| - Maximum length of tool | : | 1500 mm |
| - Capacity               | : | 25 ton  |

<b>MEASURING EQUIPMENT</b>
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**1 3D MEASURING MACHINE DEA GLOBAL**

- |                 |   |           |
|-----------------|---|-----------|
| - Displacements | : | X 2000 mm |
|                 |   | Y 3300 mm |
|                 |   | Z 1500 mm |

**1 HARDNESS GAUGE TIME HLN-11A**

- |  |
|--|
| - Rockwell B and C, Vickers, Brinell, Shore and HL |
|--|

**1 SURFACE ROUGHNESS METER PERTHEM**

- |             |
|-------------|
| - Ra and Rt |
|-------------|

**1 LAYER THICKNESS METER ELEKTRO-PHYSIK**

- |          |
|----------|
| - Micron |
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## ***ABT***

### **WELDING**

- Various semi-automatic welding machines, with full of filled thread
- Various movable positioning tables

### **RECTIFYING**

- Press to rectify welded pieces

### **DIVERS**

- Appropriate transport
- Different welding constructions
- Parts for railroute equipment