TIM-MACHINE

The most advanced bending machine equipped with 3D cameras which enable secure process, smart management and automated control of the bending process from the beginning to the end.
TIM-ING CENTAR Company has been founded in 1988. The founder and owner of the company is Turanjanin Dragan whose innovative business ideas were always ahead of their time. At the beginning, main activities of the company were production of metal constructions, awnings, sunshades as well as production of aluminium joinery.

- In 1990 the company initiates the bending of aluminium profiles used for arched joinery.
- In 1999, based on the acquired experience in the aluminium profiles bending field, the company develops a unique model of the machine adapted for bending aluminium joinery profiles.
- In 1999 the company introduces completely new and unique method for bending PVC profiles using a machine with three rollers. The idea was developed by the 18 years old son of the owner, Uroš Turanjanin, who is today the owner of this world-renowned company that produces specialized machines for bending aluminium and PVC joinery profiles.
- In 2008 the company is relocated to the newly built production facilities, covering 1.350 square meters area.
- In 2014, cooperating with one of the world’s leading experts in the optoelectronics field, the company reaches significant improvements, leading to the installation of the high-precision 3D cameras to the machines and creating the state-of-the-art system for automated control of the bending process.

Sincerely,

Dragan Turanjanin

Uros Turanjanin
Innovative 3D technology utilizing latest 3D cameras provides unlimited options when producing complex arches as well as superior supervision and control of the automated profile bending process from the beginning to the end.

3D cameras provide automated adjustment of the bending process based on the type of material, whether it is aluminium, PVC with or without steel reinforcement.

Powerful computer system controls the bending process in real time using the most advanced algorithms.

Possibility to bend complex arches in only one automated process.

Innovative technology detects the middle point of the arch with millimeter precision utilizing laser device.

What separate us from our competition

- High-precision 3D cameras control and monitor the bending process
- Detecting the outlines and position of the profile bent on the machine
- Automatic detection and control of the bent profile angle during the process
- Automatic measurement of the arch width and height during the bending process
- Automatic halting of the bending process when an obstacle is detected in the area around the rollers and within the movement path of the profile
- Automatic detection of the profile width prior to and during the bending process
- Automatic detection of the profile total length prior to the bending process
- Automatic positioning of the profile to the middle point prior to the bending process
- Controlling the machine and the bending process via mobile devices from any location
- Laser device detects the middle point of the arch with millimeter accuracy thus achieving symmetry between left and right side of the arch
- Laser device used for correcting the middle point of the arch error during the bending process
- We were the first company in the world to bend PVC profiles with and without steel reinforcement using the machine with three rollers, way back in 1999
Technical specifications

Name: TIM-MACHINE
Model: Manual
Dimensions: 1650 x 1100 x 1270 mm
Weight: 800 kg
Number of propulsive axles: 3
Axle rotation speed: 0-35 °/min
Axle diameter: 70 mm
Axle height: 160 mm
Supply voltage: 3x380V–50 Hz
Electric engine with reductor 1: 5.5 KW
Electric engine with reductor 2: 2.2 KW
Electric engine with reductor 3: 1.1 KW
Warranty: 1 year
Country of origin: Serbia

Arch shapes

CE

MANUAL

MANUAL

MANUAL
**Technical specifications**

- **Name**: TIM-MACHINE
- **Model**: NC
- **Dimensions**: 1650 x 1100 x 1270 mm
- **Weight**: 820 kg
- **Number of propulsive axles**: 3
- **Axle rotation speed**: 0–35 °/min
- **Axle diameter**: 70 mm
- **Axle height**: 160 mm
- **Supply voltage**: 3x380V–50 Hz
- **Electric engine with reductor 1**: 5,5 KW
- **Electric engine with reductor 2**: 2,2 KW
- **Electric engine with reductor 3**: 1,1 KW
- **Warranty**: 1 year
- **Country of origin**: Serbia

---

**Arch shapes**
### Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>TIM-MACHINE</td>
</tr>
<tr>
<td>Model</td>
<td>CNC</td>
</tr>
<tr>
<td>Dimensions</td>
<td>1650 x 1600 x 2800 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>910 kg</td>
</tr>
<tr>
<td>Number of propulsive axles</td>
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</tr>
<tr>
<td>Axle rotation speed</td>
<td>0-35 °/min</td>
</tr>
<tr>
<td>Axle diameter</td>
<td>70 mm</td>
</tr>
<tr>
<td>Axle height</td>
<td>160 mm</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>3x380V–50 Hz</td>
</tr>
<tr>
<td>Electric engine with reductor 1</td>
<td>5.5 KW</td>
</tr>
<tr>
<td>Electric engine with reductor 2</td>
<td>2.2 KW</td>
</tr>
<tr>
<td>Electric engine with reductor 3</td>
<td>1.1 KW</td>
</tr>
<tr>
<td>Warranty</td>
<td>1 year</td>
</tr>
<tr>
<td>Country of origin</td>
<td>Serbia</td>
</tr>
</tbody>
</table>

### Arch shapes

- [CNC AUTOMATIC](#)
- [CNC AUTOMATIC](#)
- [CNC AUTOMATIC](#)
- [NC AUTOMATIC](#)
- [NC AUTOMATIC](#)
- [MANUAL](#)
**Technical specifications**

**Name** | TIM-MACHINE
---|---
**Model** | CNC 3D
**Dimensions** | 1650 x 2180 x 2800 mm
**Weight** | 940 kg
**Number of propulsive axles** | 3
**Axle rotation speed** | 0–35 °/min
**Axle diameter** | 70 mm
**Axle height** | 160 mm
**Supply voltage** | 3x380V–50 Hz
**Electric engine with reductor 1** | 5.5 KW
**Electric engine with reductor 2** | 2.2 KW
**Electric engine with reductor 3** | 1.1 KW
**Warranty** | 1 year
**Country of origin** | Serbia
## Technical specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>TIM-MACHINE</td>
</tr>
<tr>
<td>Model</td>
<td>CNC 3D 3 in 1</td>
</tr>
<tr>
<td>Dimensions</td>
<td>1650 x 2180 x 2800 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>940 kg</td>
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<tr>
<td>Number of propulsive axles</td>
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</tr>
<tr>
<td>Axle rotation speed</td>
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<tr>
<td>Axle diameter</td>
<td>70 mm</td>
</tr>
<tr>
<td>Axle height</td>
<td>160 mm</td>
</tr>
<tr>
<td>Supply voltage</td>
<td>3x380V~50 Hz</td>
</tr>
<tr>
<td>Electric engine with reductor 1</td>
<td>5,5 KW</td>
</tr>
<tr>
<td>Electric engine with reductor 2</td>
<td>2,2 KW</td>
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<tr>
<td>Electric engine with reductor 3</td>
<td>1,1 KW</td>
</tr>
<tr>
<td>Warranty</td>
<td>1 year</td>
</tr>
<tr>
<td>Country of origin</td>
<td>Serbia</td>
</tr>
</tbody>
</table>

## Arch shapes

- [3D CNC AUTOMATIC](#)
- [3D CNC AUTOMATIC](#)
- [3D CNC AUTOMATIC](#)
Bending technology description

1. Minimum bending radius for certain profiles ranges from 150 to 200 mm
2. Bending PVC profiles with steel reinforcement
3. Bending unlimited length of a profile

- Unlimited maximum radius of a bent arch
- Bending aluminium and PVC profiles in all four directions
- Bending PVC profiles with original protective foil
- The automated bending process for one profile on the machine lasts from 7 to 8 minutes
- The preparation process for one profile lasts from 15 to 20 minutes
- The preparation process includes obligatory sand filling of both aluminium and PVC profiles
- PVC profiles bending is performed utilizing hot air fans
- Bending aluminium profiles with and without thermal brake
- Bending aluminium profiles for aluminium-wood systems
- Bending aluminium curtain wall profiles
- Bending PVC profiles without steel reinforcement
- Bending coated, anodized, laminated and colored profiles
- Bending profiles with chambers reinforced with glass fibers
- Bending square and round profiles, maximum dimensions
  - 80 x 80 mm, wall thickness up to 4 mm
- Bending profiles within 30 to 50 square meters area
- One operator controlling the machine

Note:
Steel reinforcement can be bent within sections and regular arches with verticals shorter than 250 mm, but this complicates the welding and cutting procedure later on.
### Bending mode

<table>
<thead>
<tr>
<th>Manual</th>
<th>NC Automatic</th>
<th>CNC Automatic</th>
<th>3D CNC Automatic</th>
<th>3D CNC Automatic</th>
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<tr>
<td><img src="image1" alt="Manual" /></td>
<td><img src="image2" alt="NC Automatic" /></td>
<td><img src="image3" alt="CNC Automatic" /></td>
<td><img src="image4" alt="3D CNC Automatic" /></td>
<td><img src="image5" alt="3D CNC Automatic" /></td>
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<tr>
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<td><img src="image7" alt="NC Automatic" /></td>
<td><img src="image8" alt="CNC Automatic" /></td>
<td><img src="image9" alt="3D CNC Automatic" /></td>
<td><img src="image10" alt="3D CNC Automatic" /></td>
</tr>
<tr>
<td><img src="image11" alt="Manual" /></td>
<td><img src="image12" alt="NC Automatic" /></td>
<td><img src="image13" alt="CNC Automatic" /></td>
<td><img src="image14" alt="3D CNC Automatic" /></td>
<td><img src="image15" alt="3D CNC Automatic" /></td>
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<tr>
<td><img src="image16" alt="Manual" /></td>
<td><img src="image17" alt="NC Automatic" /></td>
<td><img src="image18" alt="CNC Automatic" /></td>
<td><img src="image19" alt="3D CNC Automatic" /></td>
<td><img src="image20" alt="3D CNC Automatic" /></td>
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<tr>
<td><img src="image21" alt="Manual" /></td>
<td><img src="image22" alt="NC Automatic" /></td>
<td><img src="image23" alt="CNC Automatic" /></td>
<td><img src="image24" alt="3D CNC Automatic" /></td>
<td><img src="image25" alt="3D CNC Automatic" /></td>
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<tr>
<td><img src="image26" alt="Manual" /></td>
<td><img src="image27" alt="NC Automatic" /></td>
<td><img src="image28" alt="CNC Automatic" /></td>
<td><img src="image29" alt="3D CNC Automatic" /></td>
<td><img src="image30" alt="3D CNC Automatic" /></td>
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<tr>
<td><img src="image31" alt="Manual" /></td>
<td><img src="image32" alt="NC Automatic" /></td>
<td><img src="image33" alt="CNC Automatic" /></td>
<td><img src="image34" alt="3D CNC Automatic" /></td>
<td><img src="image35" alt="3D CNC Automatic" /></td>
</tr>
<tr>
<td><img src="image36" alt="Manual" /></td>
<td><img src="image37" alt="NC Automatic" /></td>
<td><img src="image38" alt="CNC Automatic" /></td>
<td><img src="image39" alt="3D CNC Automatic" /></td>
<td><img src="image40" alt="3D CNC Automatic" /></td>
</tr>
<tr>
<td><img src="image41" alt="Manual" /></td>
<td><img src="image42" alt="NC Automatic" /></td>
<td><img src="image43" alt="CNC Automatic" /></td>
<td><img src="image44" alt="3D CNC Automatic" /></td>
<td><img src="image45" alt="3D CNC Automatic" /></td>
</tr>
</tbody>
</table>
In this bending mode the operator controls the bending process using controlling buttons on the machine.

**MANUAL**

In this bending mode the operator sets the profile to the initial position using buttons on the machine. In this mode the operator has to enter appropriate correction parameter depending on the material type and arch diameter for each new arch. The bending process is automated. In this mode the operator has to end the process when the desired dimensions of the arch are achieved.

**NC AUTOMATIC**

In this bending mode the operator sets the profile to the initial position on the machine. In this mode the operator has to enter appropriate correction parameter depending on the material type and arch diameter for each new arch. The bending process is automated. In this mode the operator has to end the process when the desired dimensions of the arch are achieved. This mode incorporates a safety 3D camera which temporarily halts the bending process when an obstacle is detected within the zone around the machine and the rollers.

**CNC AUTOMATIC**

In this bending mode the operator sets the profile to the initial position on the machine. In this mode the operator has to enter appropriate correction parameter depending on the material type and arch diameter. In this mode the correction parameter is inserted only once per arch. Unlike NC mode, in the CNC mode the correct corrections are stored in the machine software and the software recommends the correction to the operator for each following arch depending on the material and arch diameter. The bending process is automated. In this mode the operator has to end the process when the desired arch dimensions are achieved. This mode incorporates a safety 3D camera which temporarily halts the bending process when an obstacle is detected within the zone around the machine and the rollers.

**3D CNC AUTOMATIC**

In this bending mode the machine sets the profile to the initial position. In this mode the software automatically assigns appropriate correction parameter for bending depending on the profile, material type and arch diameter. The profile bending process is automated. The automated bending process is corrected in each passing and adapted to the currently measured angle and radius thus achieving desired bending results. The controlled automated profile bending process is enabled by the feedback loop created between the computer and the 3D cameras. The bending process ends automatically when the 3D cameras send information to the computer that the bending result matches the desired arch dimensions. This mode incorporates a safety 3D camera which temporarily halts the bending process when an obstacle is detected within the zone around the machine and the rollers.
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Manual</th>
<th>NC</th>
<th>CNC</th>
<th>CNC 3D</th>
<th>CNC 3D 3 in 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Plastic plates (diameter 200 mm, thickness 20 mm, used as supports for the tools) 6 pieces</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2</td>
<td>Steel plates (diameter 200 mm, thickness 20 mm, used as supports for the plastic tools) 6 pieces</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>3</td>
<td>Steel plates (diameter 260 mm, thickness 20 mm, used as supports for the plastic tools) 4 pieces</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>4</td>
<td>Mobile holders (used to keep profiles longer than 2.5 m parallel with the machine during the bending) 2 pieces</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>5</td>
<td>PVC insert (used to protect the shape of every duct on the profile, 1 roll weighs 5 kg) 2 pieces</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>6</td>
<td>Transparent adhesive tape (used to protect visible surfaces of the PVC profile, which can be damaged during the contact with the plastic tools) 36 pieces</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>7</td>
<td>Quartz sand (granulation 0.1 - 0.5 mm, used for filling Al and PVC profiles in order to protect inner configuration of the profile) 100 kg</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>8</td>
<td>Pneumatic pistol (used for sand compression inside the profile) 1 piece</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>9</td>
<td>Laser device (detects the middle point of the arch with millimeter precision, thus achieving symmetry of the arch) 1 piece</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>10</td>
<td>NC system (enables automated bending of one radius; it is obligatory to insert corrective parameter depending on the material, radius and type of the profile)</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>11</td>
<td>Computer (manages and controls the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>12</td>
<td>Device for uninterrupted energy supply for computer -UPS-</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>13</td>
<td>LED spotlight (for illuminating the area of the profile bending zone)</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>14</td>
<td>3D cameras (latest innovative 3D technology offering various possibilities and advanced supervision of the automated bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
### Available programs

<table>
<thead>
<tr>
<th>Program</th>
<th>Manual</th>
<th>NC</th>
<th>CNC</th>
<th>CNC 3D</th>
<th>CNC 3D 3 in 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Program (automatically bends one radius within one arch)</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>2. Program (automatically corrects the error of the middle point of the arch during the profile bending process)</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>3. Program (automatically measures the width of the profile prior to and during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>4. Program (automatically detects total length of the profile prior to the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>5. Program (automatically adjusts and corrects the profile bending process depending on the type of material being bent)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>6. Program (automatically detects and controls the profile during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>7. Program (automatically sets the profile to its initial bending position prior to the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>8. Program (automatically moves the profile and sets it to the desired position prior to and during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>9. Program (automatically detects and controls the position of the rollers during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>10. Program (automatically ends the process when the profile is bent to the predetermined dimensions)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>11. Program (automatically halts the process temporarily if an obstacle is detected in the area around the rollers or within the movement path of the profile)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>12. Program (provides an option to connect the machine with other computers for data exchange of the data needed for the profile bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>13. Program (enables automatic detection and control of the bent profile angle during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>14. Program (enables automatic detection and control of the radius of the bent profile during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>15. Program (provides automatic measurement of the bent profile width and height during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>16. Program (automatically positions the profile to the middle point of its total length prior to the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>17. Program (automatically detects the elongation of the profile and adjusts the bending process accordingly)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>18. Program (automatically detects the slipping of the encoder compared to the profile)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>19. Program (provides remote control of the profile bending process using mobile devices and laptop computers)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>20. Program (automatically adjusts the temperature of the fans for PVC profile heating during the bending process)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>21. Program (automatically bends two radii within one arch)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>22. Program (automatically bends three radii within one arch)</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
NC system upgrade provides:

- Bending profiles utilizing laser device for achieving symmetrical left and right side of an arch. PATENT
- Automated profile bending process.
- Automated bending process for one radius.
- Automated bending process requires setting the correctional parameter, inserted by the operator prior to the bending process depending on the type of the material and shape of the profile, which directly influences the parallel position of the straight parts of the arch.
- Correction of the middle point of the arch error during the bending process.
- Control and regulation of the rollers rotation speed.
- The detection of the middle roller position during the bending process with the encoder.

Additional information regarding the NC system:

- The price of the NC system installation includes one day training in the buyer’s facilities.
- The price of the NC system installation does not include transportation to the buyer nor custom expenses in the country of the buyer.
- The profiles used for the training are provided by the buyer.
- Transportation and accommodation costs for the operators during the NC system installation and training are covered by the buyer.
The installation of the CNC system provides:

- Control of the bending process using the computer which stores, corrects and recommends appropriate correction parameters for profile bending depending on the material type, profile shape and arch diameter.
- Automated initial positioning of the profile prior to the bending process.
- Additional safety for the operator in the area around the machine because this system is equipped with high-precision safety 3D camera which detects each obstacle around the machine and automatically halts the process until the obstacle is removed from the danger zone around the machine. **PATENT**
- Profile bending with laser device which provides perfect symmetry between the left and right side of the arch. **PATENT**
- Correction of the middle point disposition during the bending process. **PATENT**
- Bending one radius in the automated mode where the operator ends the process when the desired dimensions of the arch are achieved.
- Control and speed regulation of the rollers’ rotation.
- The detection of the middle roller position during the bending process with the encoder.

**Arch shapes**

- The price of the CNC system installation includes one day training in the buyer’s facilities.
- The price of the CNC system installation does not include transportation to the buyer nor custom expenses in the country of the buyer.
- The profiles used for the training are provided by the buyer.
- Transportation and accommodation costs for the operators during the CNC system installation and training are covered by the buyer.
The installation of the CNC 3D system provides:

- Automatic detection and control of the bent profile angle during the process.
- Automatic measurement and control of the arch width and height during the process.
- Automatic halting of the bending process when an obstacle is detected in the area around the machine.
- Automatic positioning of the profile to the middle of its total length prior to the bending process.
- Automatic positioning of the profile to the initial position prior to the bending process.
- Automatic detection and measuring of the profile width prior to and during the bending process.
- Automatic detection of the type of material that is being bent.
- Automatic adjustment of the bending process depending on the material that is being bent.
- Automatic bending of only one radius in one arch within one process.
- Automatic bending of one radius in one bending process.
- Automatic detection and control of the profile during the bending process.
- Automatic positioning of the profile to the initial position prior to the bending process.
- Automatic detection of the profile elongation and adjustment of the bending process accordingly.
- Automatic termination of the bending process when the predetermined dimensions of the arch are achieved.
- Automatic activation and adjusting of the heating temperature for the PVC profile during the bending process.
- Connection to other computers for data transfer purposes.

Arch shapes
The program CNC 3D 3 in 1 can be installed only to the existing CNC 3D machine model.

The program CNC 3D 3 in 1 has same characteristics as the already mentioned CNC 3D model with the addition of:

- Bending two radii in one automated bending process.
- Bending three radii in one automated bending process.

Arch shapes
3D cameras installation

- The price of the 3D cameras installation includes one day training in the buyer’s facilities.
- The price of the 3D cameras installation does not include transportation to the buyer nor custom expenses in the country of the buyer.
- The profiles used for the training are provided by the buyer.
- Transportation and accommodation costs for the operators during the 3D cameras installation and training are covered by the buyer.
- Minimum 2.9 m ceiling is required for the 3D cameras installation.

Installation of the CNC 3D 3 in 1 program

- The price of the CNC 3D 3 in 1 program installation includes one day training in the buyer’s facilities.
- The profiles used for the training are provided by the buyer.
- Transportation and accommodation costs for the operators during the software installation and training are covered by the buyer.
Training in the facilities of the manufacturer

- The price of the machine includes a three-day training procedure.
- The profiles used during the training are extra charged.
- Transportation and accommodation expenses during the training are not included in the price.
- Meals during the training in the company’s facilities are included in the price.

Training in the facilities of the buyer

- Is extra charged, per day, including transit days.
- Transportation and accommodation expenses during the training are covered by the buyer.
- Profiles and everything needed for the bending should be provided according to the specifications of the manufacturer.
- The buyer is required to provide adequate area for preparation i.e. profile sand filling procedure.

Our references

- CYPRUS
- EGYPT
- TUNISIA
- QATAR
- RUSSIA
- BRASIL
- CANADA
- USA
- BELGIUM
- GERMANY
- POLAND
- FRANCE
- SPAIN
- CZECH R.
- ITALY
- MACEDONIA
- KAZAKHSTAN
- UKRAINE
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