

## ***EQUIPMENT FOR PRODUCTION OF PVC CORNER PROFILES BY ULTRASONIC WELDING OF FIBERGLASS MESH***



## **1. TECHNICAL CHARACTERISTIC.**

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<i>Length of the mesh</i>	from 300 to 500 meters each spool
<i>Width of the mesh</i>	max. 250mm
<i>Material of the welding cord</i>	PVC – material should be suitable for ultrasonic welding
<i>Length of the cord</i>	from 100 to 250 meters
<i>Size of the welding cord</i>	Φ1.2mm / +0, - 0.1
<i>Ultrasonic welding of both sides</i>	simultaneous
<i>Output module with quantity counter</i>	Capacity 5, 10, 15, 20, 25 pcs.
<i>Productivity</i>	15 m/min
<i>Power supply</i>	3 PH + neutral + earth 400V / 50 Hz
<i>Air supply</i>	4 - 8 bar
<i>Ultrasonic power</i>	2 x 3000W / 20kHz
<i>Staff</i>	1 operator + 1 worker
<i>Weight</i>	1500 kg
<i>Overall dimensions (LxWxH)</i>	14000 x 3000 x 2200 mm
<i>Ambient operating temperature</i>	10° to 35° C
<i>Humidity of the environment</i>	< 80% at 25° C

## **2. TECHNICAL DESCRIPTION**

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The ultrasonic welding machine is modular and consists of the following separate modules:

- Electro automation and control block;
- Remote control panel;
- Input module - table;
- Module for ultrasonic welding with additional material, assembling the mesh to the profile;
- Cutting module;
- Output module for the welded profile.

The separate modules are connected in one machine and operate synchronously. The machine is designed for production of two types of corner profiles. Adjustment for production of the different types of profiles is made by changing the parameters of feeding the fiberglass mesh.

The machine features high efficiency of 15 meters per minute, which makes it suitable for processing materials with identical characteristics. The quality of welding depends on the quality of materials.



***Use only high-quality materials with constant characteristics to ensure the excellent quality of all finished details.***

## **Module for ultrasonic welding**

Fig. 7 shows the welding module, which assembles the mesh to the profile, and welds them by using additional PVC cord and ultrasonic energy.



Welding module

The fed profile successively passes through driving metal rollers. The mesh is fed after the first two rollers. It is assembled for profile type A by the first forming roller. The meshes for profile type B are fed from two sides and in this case the first forming roller is not used.

The modules enter the ultrasonic welding module, where the additional PVC material (electrode, cord) is fed right before the sonotrodes. The mesh is welded to the profile by using the additional material. Welded details are pulled out of the welding module by three consecutive rollers.

There is a reparation box, placed under each welding sonotrode, for collecting the dust, which falls from the modules and from the mesh due to the ultrasonic vibrations.