

#### ► DESCRIPTION

Presented ultrasonic manufacturing process offers many benefits in producing and shaping of composites :

- Cohesion between fibers and resin
- No delamination
- No chipping
- No het deterioration
- Increased of tool life time.

#### ► ULTRASONIC CUTTING

Depending on the composite structure our ultrasonic cutting equipment is able to cut up to 70 m/min, in particular:

- 20 m/min for prepreg stack of 10 mm thick (up to 25 mm thick)
- 30 m/min for dry fibers of 0.5 mm thick
- 70 m/min for prepreps of 0.4 mm thick



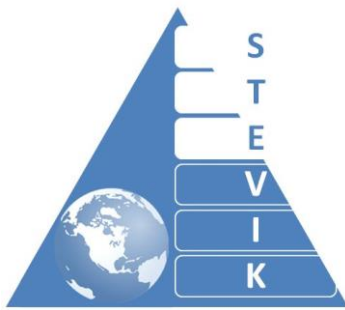
Ultrasonic knife on digital control



Ultrasonic knife on robot

#### ► MATERIALS AND THICKNESSES THAT CAN BE CUT:

- Not cured ply panels of 10 mm
- Mid cured panels of 5 mm
- Not cured fibers of 1mm
- PEI carbon fibers of 0.4 mm



# TECHNICAL DATA SHEET

## SK1 GM

Production solution: ultrasonic cutting and welding of composites

- PA Fiberglass (g.r.p) of 2 mm
- PES strap of 4 mm
- PP panel of 5 mm
- Kevlar fiber of 0.5 mm

### ▶ ADVANTAGES

- High frequency vibrations of the tool prevent from gripping to the material and reduce the maintenance cost.
- Ultrasonic cutting tool improves quality and productivity.
- Easy setting and assembly: blades are indexed on mechanic.

### ▶ ULTRASONIC WELDING

Ultrasonic welding provides a perfect quality of the finished product.

A real-time control of the power spread into the product guarantees not to damage the grains and the resin quality.

### ▶ MATERIALS THAT CAN BE WELDED

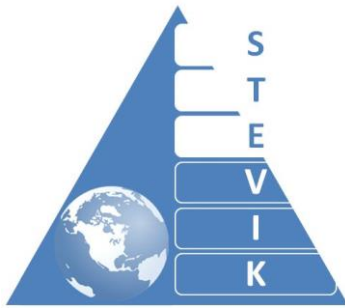
- PEI thermoplastic resin
- PEEK thermoplastic resin
- Glass fiber
- Carbon fibers



10 axis digital machine with 7 ultrasonic sealing systems



Robotized welding effector



# TECHNICAL DATA SHEET

## SK1 GM

**Production solution: ultrasonic cutting and welding of composites**

### ► TECHNICAL DATA

Weight: about 7 kg  
Dimensions: 350 x 270 x 110  
Power supply: 230B mono 50/60 Hz  
Link: RS232 (recommended standard)  
Constant and settable temperature does not depend on:

- Pressure mode
- Used power
- Electric power fluctuations

European connectors;  
Conform to CE norms;  
Numerical power supply, numerical INTEL PLL;  
Automatic optimum frequency research;  
Numerical frequency maintenance in real time;  
Series communication link JBUS;  
Programming of welding time;  
Defect PNP signals;  
Security dedicated to power over intensity (time of response <1 mks);  
Technology based on IGBT (insulated-gate bipolar transistor) 4-th generation;  
Rate (efficiency) > 90%;

### ► NOTE

Please contact us to get further information, as well as to make an equipment design according to your technical specification.

Standard warranty period: 12 months.