## Hamacher Maschinenbau GmbH



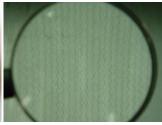
## Drum Type Machines for parallel and trapezoid heating fields

With laminated glass raises the possibility to embed heating fields in glass products. These heating fields usually consist of very thin tungsten wires, which are placed on the interlaying PVB film. Busbars connect the wires and connectors are used to connect the busbars and wires to the electric power supply.

Hamacher designs and delivers since many years machines to glass industry, which place those wires on the PVB.

With the patented pinwheel technology, the wires are formed to wiggle wires and glued to the PVB film.



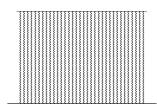


The PST machine type is mainly designed for mid to high volume production with rectangular or trapezoid (optional) fields.

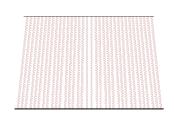
This machine mainly consists of a rotating drum body and moving wire laying heads. The PVB sheets are applied to the drum body and held by vacuum. The heads hold the tungsten wire spool, form the wiggle wire with the pin wheels and apply it with a special heating roller to the PVB surface. They move during laying process along the drum surface and create the heating field.

The standard version of the drum type machine PSW is designed to place rectangular heating fields on PVB. The optional trapezoid version of the drum type machine PSW is designed to place also trapezoid heating fields on PVB. In this case all heads move along the PVB to place wires with trapezoid field geometry. This heating field type is used to fill a larger area of the windshield with heating wires.

Parallel heating field



trapezoid heating field





Technical specifications:

Product:

PVB sheets with parallel or trapezoid heating wires

Drum diameter:

From 1.1 to 2m

Drum length:

From 2.2 to 4.95m

Wire:

Tungsten wire down to 16µm

Wire peak-to-peak amplitudes:

Up to 1.5mm

Wire wave length:

From 0.5 to 5mm

Laying speed for rectangular fields:

Up to 70m/min

Laying speed for trapezoid fields (optional):

Up to 35m/min

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