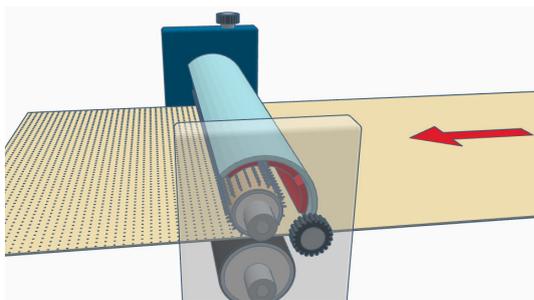


## HOT MICRO-PERFORATOR MODEL HN100



This micro-perforator is designed to punch **MICRO HOLES** in moving film using **HOT NEEDLES**. This machine has to be integrated into existing machinery such as extruders, bag machines, slitters or printing machines. The **HN100** is a **MOTORIZED**

**MACHINE** with a **SYNCHRONIZATION SYSTEM** that guarantees perfect micro holes on various materials, even with low heat input. It is ideal for delicate work on heat-shrinkable material, for works that require holes with a very high density of needles per cm<sup>2</sup> and to work mono or bi-oriented materials.



### How it works

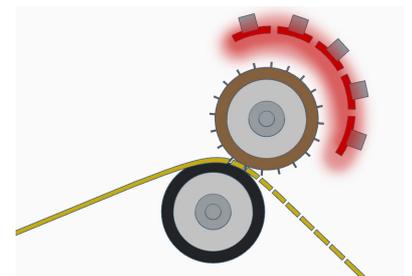
The moving film arrives at the machine and is perforated by a **MOTORIZED HEATED NEEDLE SHAFT** and a **COUNTER ROLLER**. Their approach is carried out through a pneumatic system and perforation is adjusted by two micrometric screws.

### DATA SHEET

<b>Needle roller Ø</b>	100mm
<b>Needles Ø</b>	Min. Ø100µ - Max. Ø3mm
<b>Movement</b>	Movement by asynchronous motor 400 V+N+T - 50Hz
<b>Penetration regulation</b>	Micrometric screws with graduated knobs
<b>Maximum working speed</b>	4 - 200* meters per minute
<b>Heating power</b>	8 Kw/meter
<b>Maximum temperature</b>	240 C°
<b>Counter roller movement</b>	Pneumatic movement
<b>Air pressure</b>	6 Bar
<b>*</b>	This value depends on the type of material to be processed

### HOLES OF

Ø 100µ → Ø 3mm



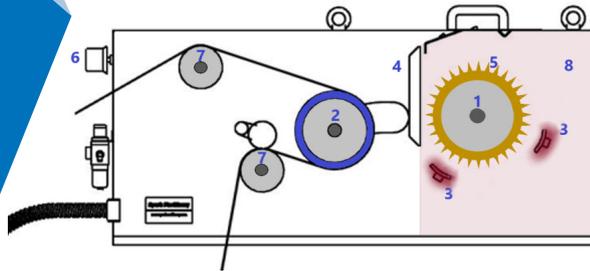
*The Micro-perforation, made by melting and punching the material, is carried out thanks to needles fixed on bronze sleeves, which are mounted on the needle shaft.*

### OPTIONALS

- Control system: electric control panel with integrated touch screen
- Sensor for machine block in case of film break
- Suction hood
- Trolley
- Filter system for extractor hood
- Table to change needle sleeves rapidly

## TECHNICAL DESCRIPTION AND COMPONENTS

The **MOVEMENT SYSTEM** moves the needle shaft and is composed of an **ASYNCHRONOUS MOTOR WITH ENCODER**. The motor has a "tracking" function that allows the needle shaft to synchronize its rotation with the sliding speed of the film.



This machine also has a **SOFTWARE WITH 4.0 PREDISPOSITION**. Using the touch screen, the operator manages all the functions of the machine in a simple and intuitive way.

### 1: Needle shaft

It is made of **STEEL**. The mechanical parts that make it up (including the bearings) are adequate for preventing damage caused by thermal expansion.

### 2: Counter roller

It has a **UNIFORM SURFACE**, so that it is possible to obtain homogeneous holes. It can be made of rubber, rectified natural bristles or plastic bristles. The counter roller is moved by a pneumatic system that brings it closer to or away from the needle shaft.



### 3: Electric heating system

It consists of a group of lamps (**INFRARED CERAMIC RADIATORS**) with PID controller to ensure constant temperature along the entire surface of the needle cylinders. The PLC manages the three heating lines independently, so as to ensure uniformity of heat emission. The operator can monitor the temperature inside the chamber via touch screen.

### 4: Shutter

It is one of the elements of the security system. It separates the insulated chamber from the counter roller and is moved by two pneumatic pistons.

### 5: Interchangeable cylinders

Segments made of bronze or steel with needles fixed, are mounted on the shaft.

### 6: Micrometric screws

They are used to adjust the distance between the counter roller and the needle roller, so that they create the **PLUNGING ADJUSTMENT SYSTEM**.

### 7: Idler rolls

Made of steel, they are part of the **TRANSFER CASE** and are used to control the tension of the film.

### 8: Insulated Chamber

It is composed of a stainless steel sheet and contains the **MOTORIZED STEEL SHAFT (1)**, the **CERAMIC LAMPS (3)** to heat the needle cylinders and **BEARINGS**, useful for thermal insulation.



## MATERIALS PROCESSED BY HN PERFORATORS

PE - LDPE - HDPE - LAMINATED - FOOD PVC - ALLUMINIUM - PAPER



**SPARK MACHINERY**

Spark Machinery s.r.l. - P.IVA 01392850457

Production site  
Via Toscana n°114  
56035 Perignano (PI)

info@sparkmachinery.com  
+39 0587812952  
www.sparkmachinery.com