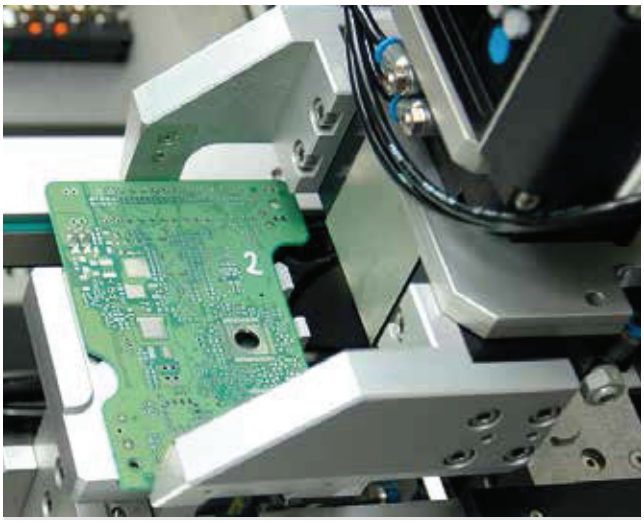
Forming- and test machine for thermal fuse

The forming- and test machine including an automatic handling system contains a single forming unit for the shaping of thermo fuse brackets on various circuit boards.

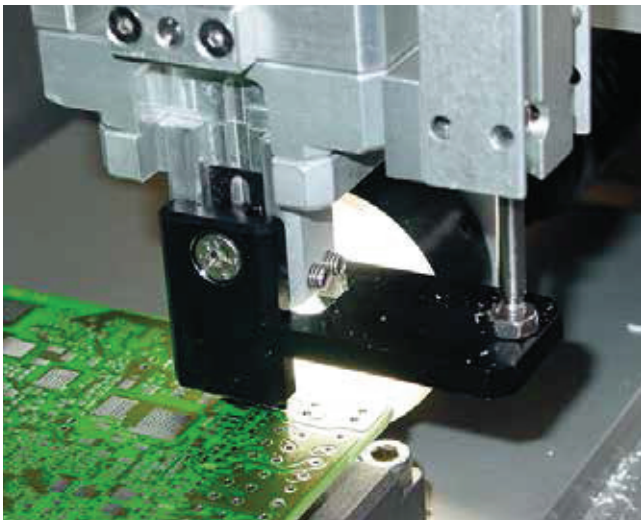
To realize an exact embossing the circuit boards are retained by pneumatically actuated stoppers at a therefore special defined position. The new developed gripping system transports the PCB to the forming unit outside the line.

After the forming by controlled force-displacement the circuit boards are examined by a vision system. The hereby established measurement results are transferred to a database for variance analysis.

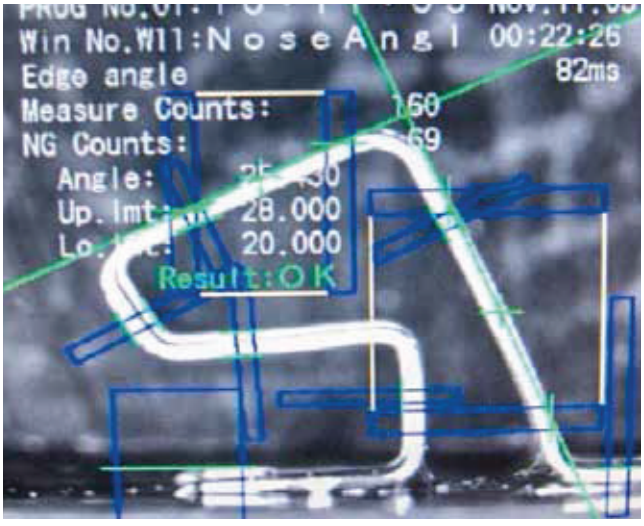
PCBs, which are qualified as ‚good', are returned to the automatically adjustable conveyor system for further processing. To ensure lower cycle times and highest quality aims the electronic boards which are classified as 'fail' are picked up by a robot on a narrow turning radius to the fail part chute.



Gripper



Forming- and measuring unit



Optical measuring

Basic setup

The forming- and test unit is build up on a conveyor system of IMAK. The transport of the circuit boards to the forming and test unit is performed by a RS 40 robot of Stäubli.

Dimensions in mm (WxHxD)

1200 x 1960 x 835

Voltage

230/115 V AC

115 V 60/70 Hz Stäubli RS 40

Weight

550 kg

Cycle time

6 - 9 s
Lifting, Forming, Measuring the PCB

Sensors

Optoelectronical sensors

Inductive proximity switches

Pneumatics

1 Festo valve cluster/system

6 bar constantly

Embossing stampl

Carbidge metal

Exchangeablel

Up to 60 N down force

Actuator

Variable embossing speed

(treaded spindle, Maxon control)

Parts inspection

Optical check and analysis of the test parameters

position, bending angle, bending radius