METESS

ČESKÝ VÝROBCE

www.metess.cz
metess@metess.cz
tel.: 583 211 446, mobil.: 608 304 157

Heat Staking

Heat Staking is technology for joining plastic parts by making heads on pins of one joined part. The pin is made right on one of the plastic part. By heating a pin the pin´s head is shaped and immediately cooled down.

How to heat geometry of pin

- heating of pin by heating element (heater)
- heating of pin by hot air

How does the heating by heater work

Pin is heated after touch of heater at the pin. Heater conduct heat to pin. Shape pin is cooled via airstream. Every pin has it own heating element placed on a sliding unit with an indication of the position. The indication of the position is necessary for a well-done tight join. The heating element must be heated up and cooled down on the accurate temperature to prevent degradation (decrease of strenght) of the plastic material.

Advantages

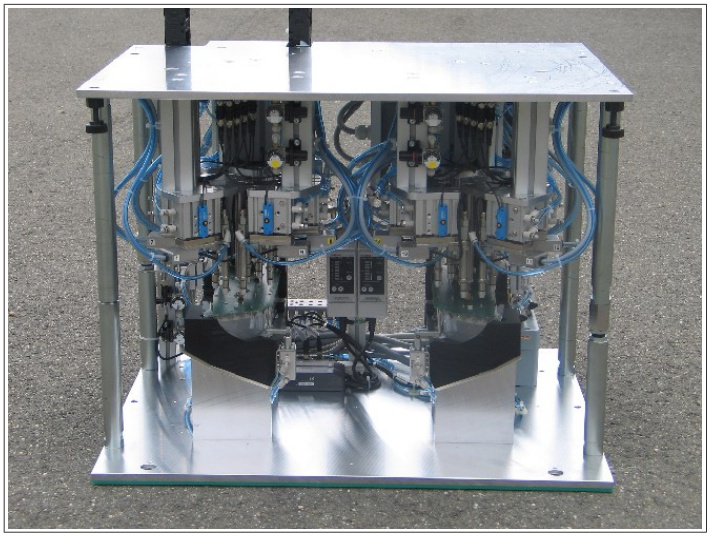
- Compact heat staking unit, making it suitable for small parts with high density pins
- Heat staking of decorative demanding and sensitive parts such as visual parts or electronic boards

How does the heating by hot air work

Pin is heated by flow of hot air. Punch ensures shaping and cooling of the pin´s head. Every pin has it own nozzle with hot air. Punch is placed on sliding unit with an indication of the position for every pin. Heating time and temperature must be set up and check to prevent degradation (decrease of strength) of the plastic material.

Advantages

- Melting of whole volume of the pin and next demolition of whole volume of the pin at once. Reason why strength of the join is higher, determination of backlash in the join.
- Joining of materials containing glass up to 50%



General benefits of Heat Staking

- clean technology – there is no dirt (e.g. powder) like during ultrasonic welding
- to the connection of the parts is not necessary additional components such as screws, rivets ...
- joined parts are loaded by minimal force, there are no vibration nor shocks
- joined parts are under no thermal stress
- that´s why the technology is suitable for decorative sensitive parts such as PCB, parts of headlights, parts of appliance, visible caps, etc.
- suitable for metalized parts and parts filled with glass or other fillers
- suitable for materials like PC, PC-HT, PC/ABS, ABS, PMMA, POM, PP, PE

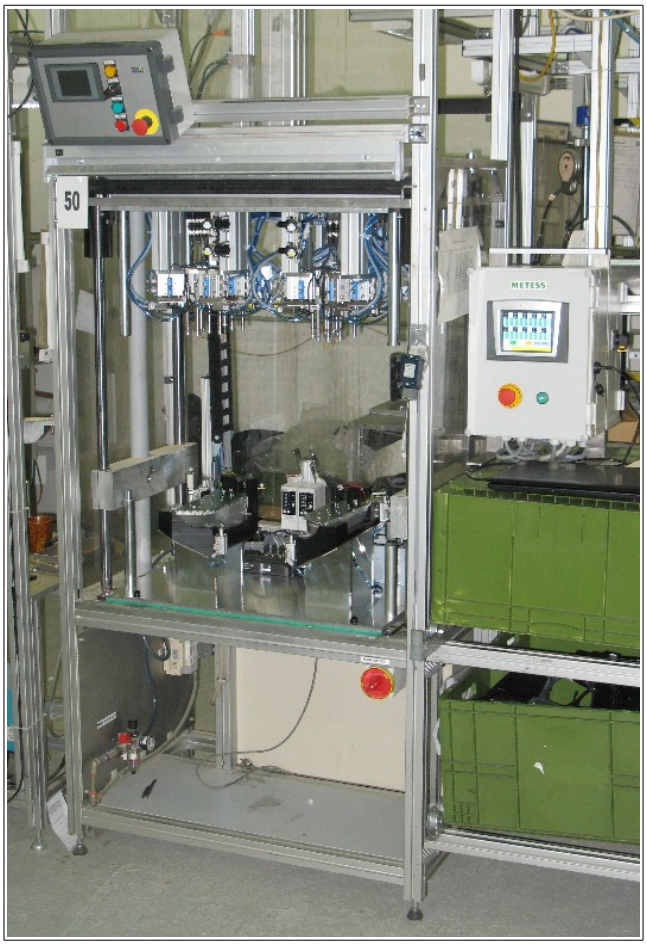
METESS

ČESKÝ VÝROBCE

www.metess.cz
metess@metess.cz
tel.: 583 211 446, mobil.: 608 304 157

Design

The Heat Staking technology is placed in a jig which is put into an universal assembly machine. Every jig is composed of a fixture for locating the plastic parts and a sliding unit with the heating element.



Controlling

The Heat Staking process control is done via an universal control unit connected by a connector with the jig. The universal control unit controls the temperature and the position of each of the pins. The universal control unit is capable to control more different jigs.

Company Metess offers

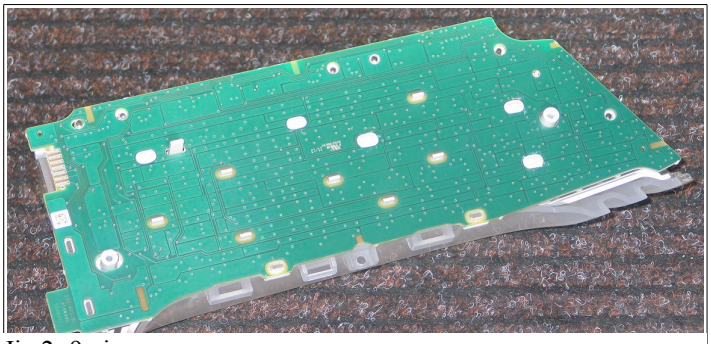
- possibility of any shape of the pin's head
- Heat Staking cycle time 15 – 45s
- measurement of the Heat Staking track and PID regulation of the temperature for every single pin
- universal control unit with the possibility of Heat Staking of 8, 12, 16, 20 pins at once
- universal control unit ready to operate with up to 12 jigs
- the control unit with the same interface for melting via heater and via hot air
- universal control unit with manual Heat Staking tool for prototype workshops

What we Heat Stake

Jig 2×3 pins, distance of the pins 16 mm

Jig 10 pins

Jig 10 pins



Jig 2×9 pins