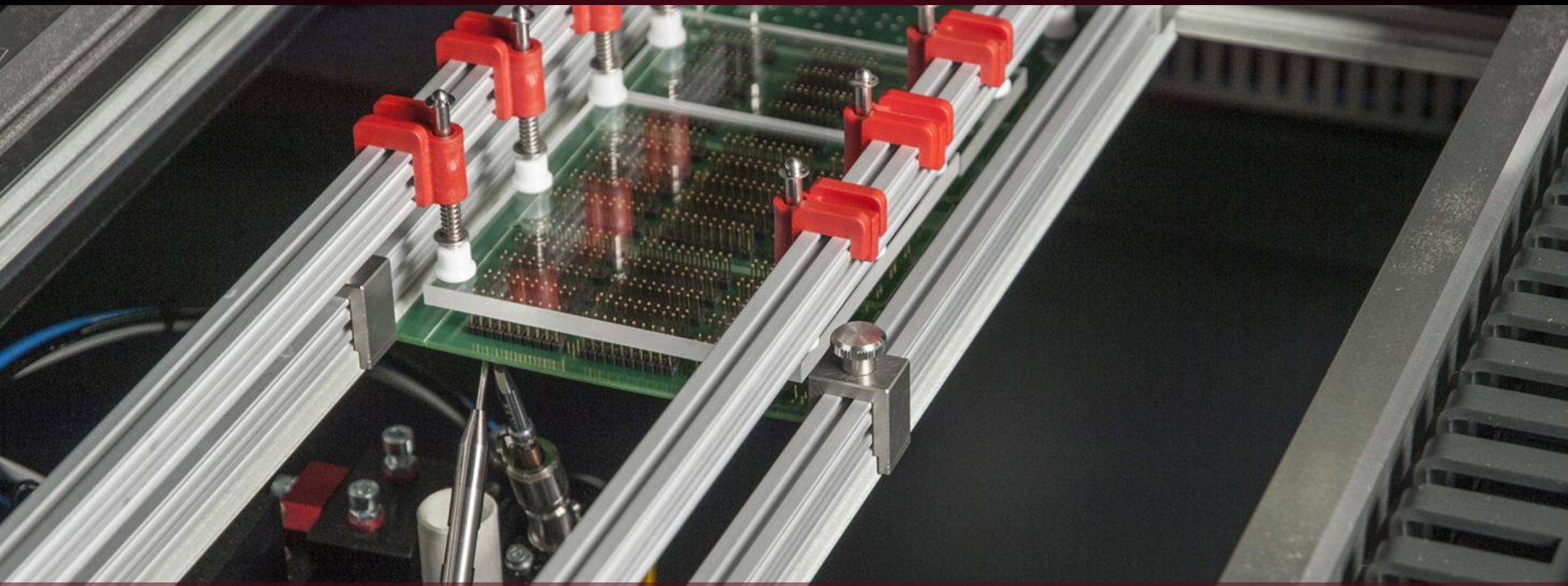
mta
SOLDERING & DISPENSING

unitechnologies
THE ART OF PRECISION



mta® Bottom Side Selective Soldering Machine with Iron Head Technology

an alternative or addition to selective mini-wave

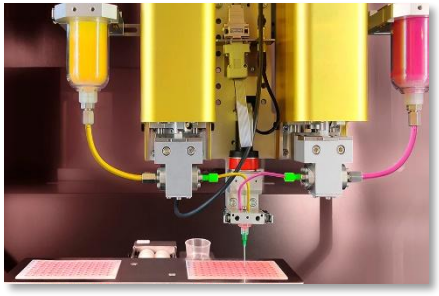
Introduction

- **The most common THT soldering technology is the selective mini-wave.**
- **The occurrence of high-mass joints is a growing trend.**

Table of content

1. mta® – short introduction

- mta® a brand of Unitechnologies SA
- Leader in selective soldering & volumetric dispensing
- 50 years of automation experience
- Process analysis in state-of-the-art test laboratories
- More than 2’700 machines installed worldwide



2. Iron head technology versus mini-wave

a. What makes some joints problematic?

- High-mass joints need long exposure to the wave
- Copper dissolves into molten solder
- Copper layers can become dangerously thin

→ **Mini-wave is not the best solution for high-mass joints.**

2. Iron head technology versus mini-wave

b. How does the iron solve these problems?

- Individual soldering parameters
- Pre-heat of each joint using a heating element
- Solid solder wire melts on contact

With iron there is no copper dissolution.

2. Iron head technology versus mini-wave

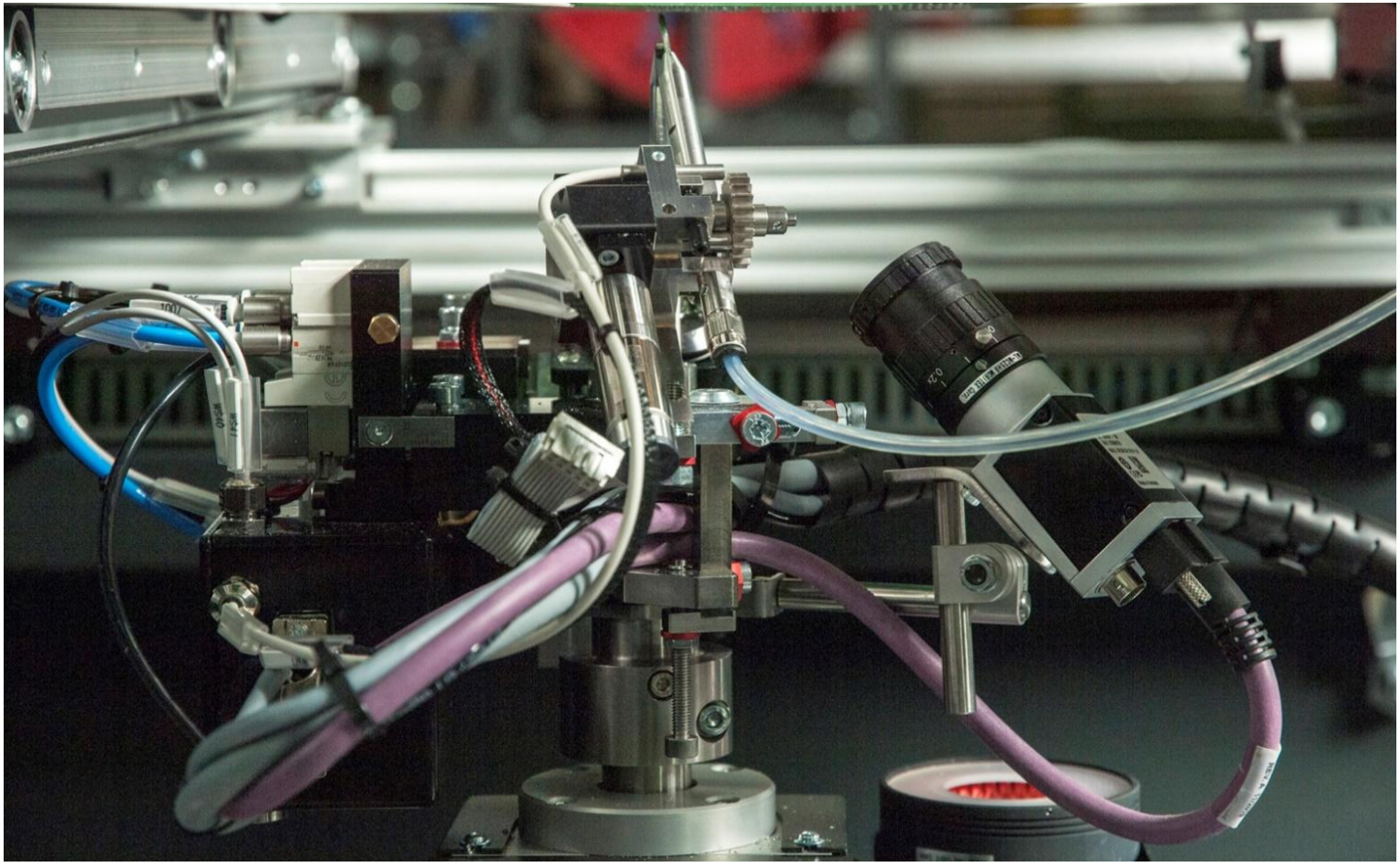
c. Aren't irons slower?

- Less effective on relatively small and similar mass joints
- Short time to soldering temperature
- Minimized energy fluctuations

Iron is normally faster with high-mass joints.

3. **Iron soldering head**

Iron soldering head designed for **bottom side point-to-point applications.**



3. Iron soldering head

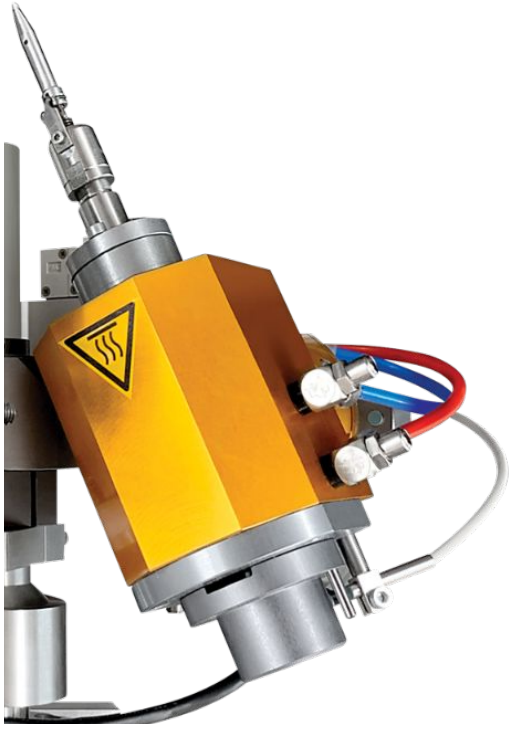
a. Heating element:

- Individual soldering parameters for each point:

  Pre-heating time
  Soldering temperature
  Post-heating time

- Short time to soldering temperature

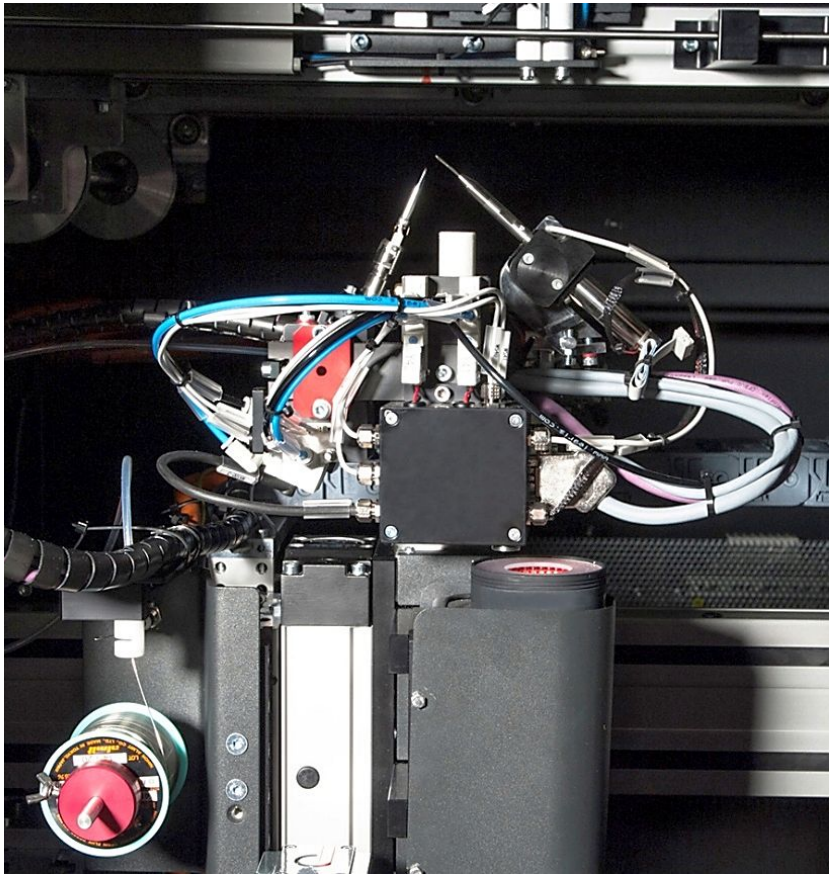
- Accurate temperature control



3. Iron soldering head

b. Solder wire feeder:

- Drives the solder alloy to the exact position
- Checks the amount been dispensed
- Quick and easy change of solder alloys



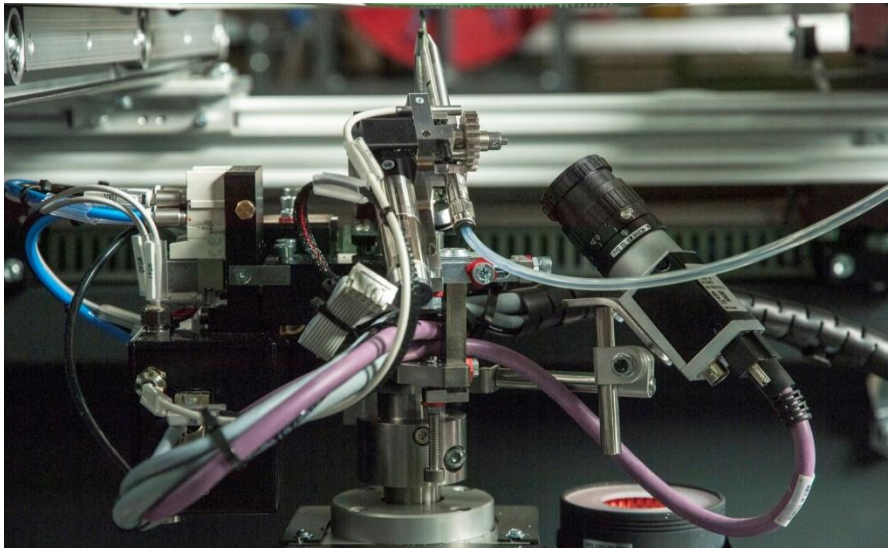
3. Iron soldering head

c. Vision system:

- Points on PCB are automatically realigned
- Identifies process points or fiducial marks
- Sensor measures vertical position

4. Bottom side selective soldering machine MPS700

MPS700 an inline, **bottom-side** process that uses a robotic soldering iron.



4. Bottom side selective soldering machine MPS700

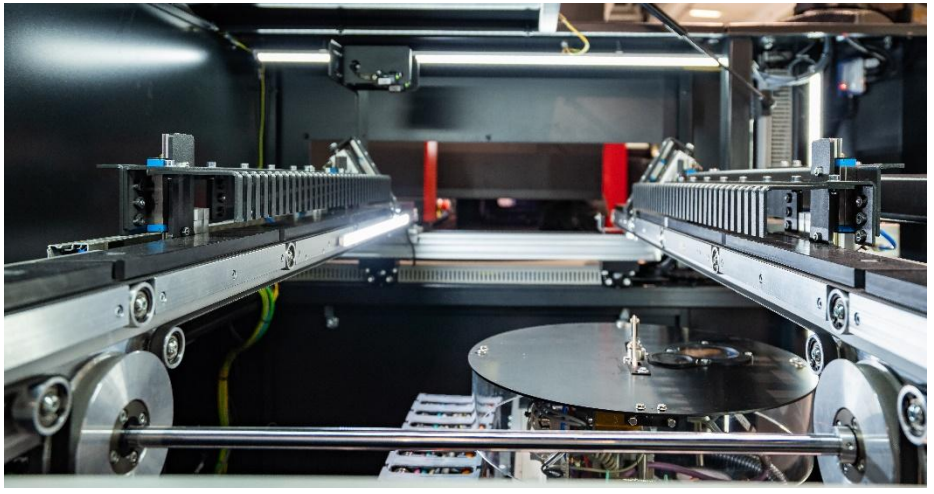
a. Cartesian robot:

- 4 axes cartesian robot
- Can reach joints unreachable with fountains
- Teaching using inspection camera

4. Bottom side selective soldering machine MPS700

a. Conveyor system:

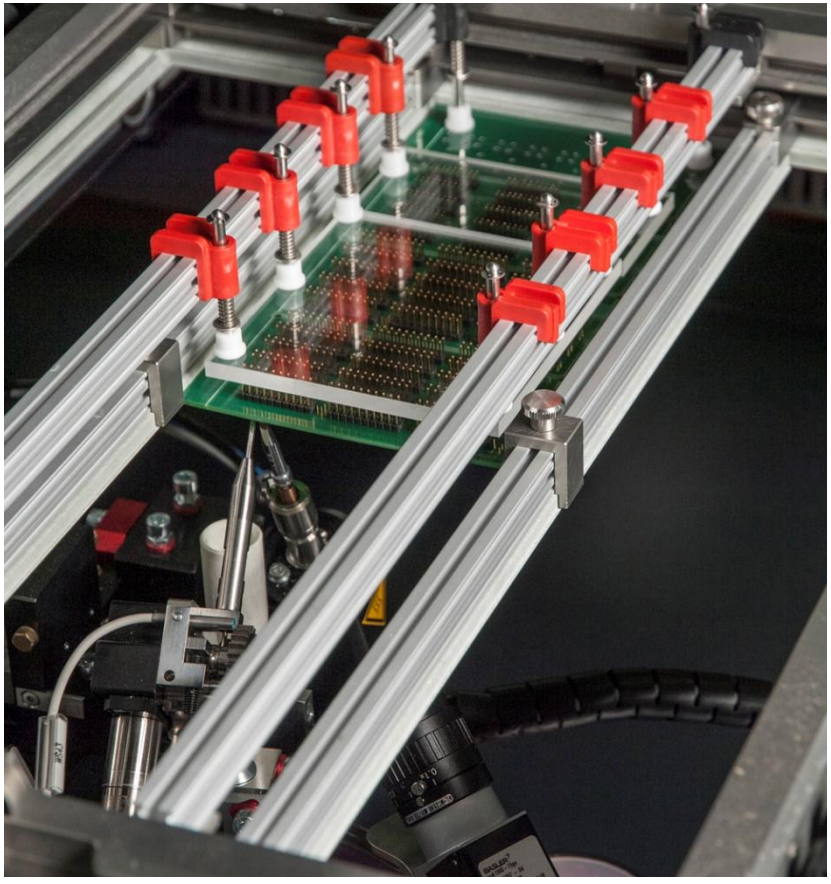
- Meets SMEMA standards
- Easy integration into production lines
- Adjustable wide from 50 to 700mm



4. Bottom side selective soldering machine MPS700

a. Indexing and clamping system:

- Wide range of pallets/PCB`s
- Locates boards
- Accurately holds in position



5. “Environment-friendly” production system

MPS700 provides significant advantages:

- Electrical consumption is much less compared to mini-wave
- No need for nitrogen
- Flux residues and dross are minimal
- Very low maintenance

6. Iron head technology an alternative or addition to mini-wave

MPS700 is a **complement** to mini-wave soldering – **not a replacement for it**.

Both technologies combined:

- Fountain can operate at its ideal temperature
- MPS700 processes high-mass joints

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Question and Answers