



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

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

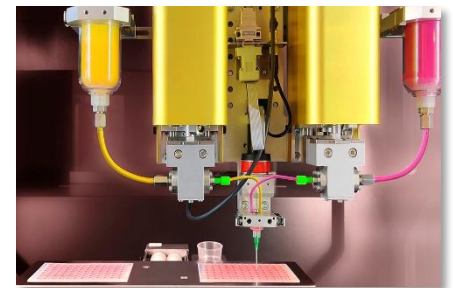
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1. mta® – short introduction



- 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

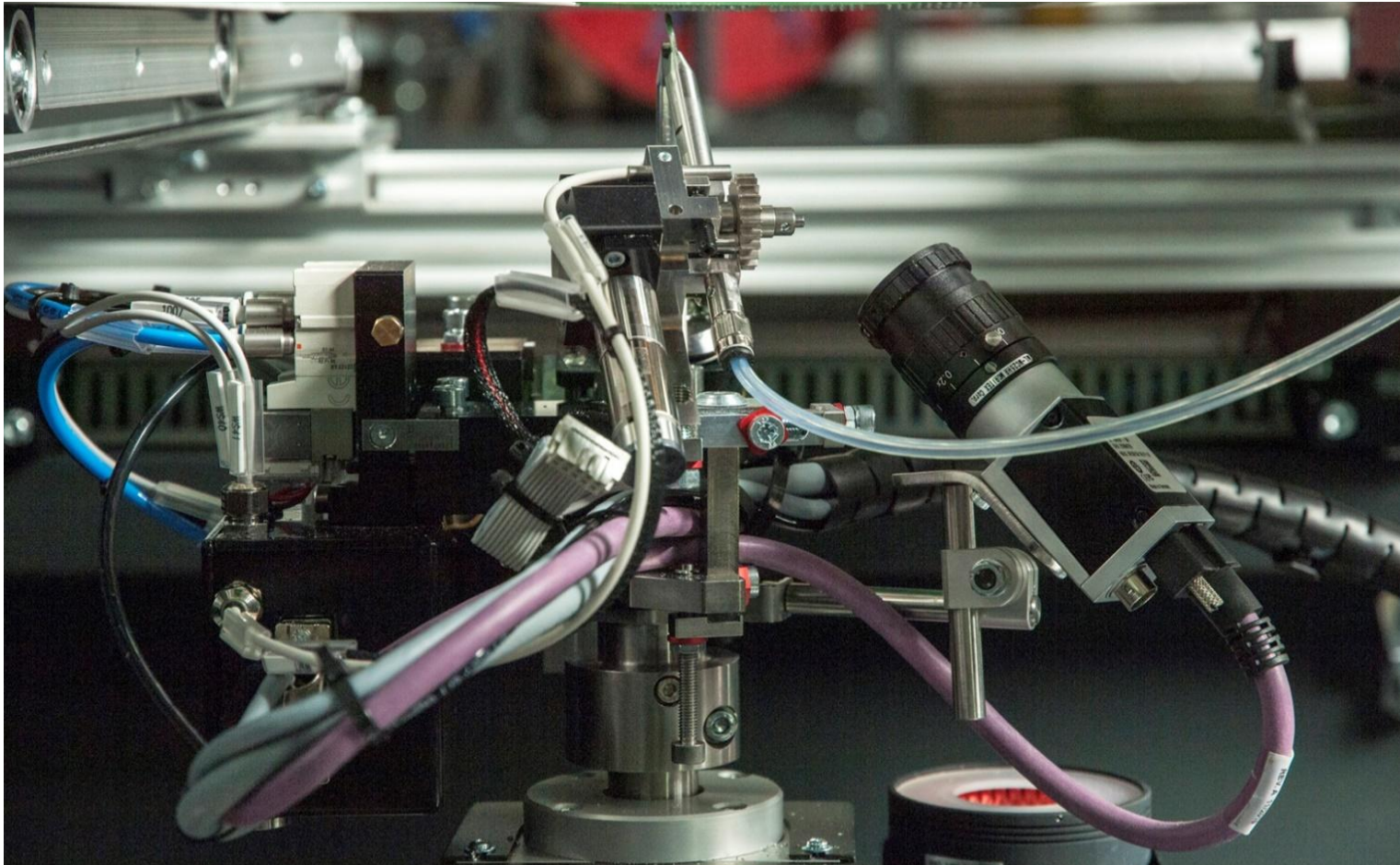
c. Aren't irons slower?

- 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:

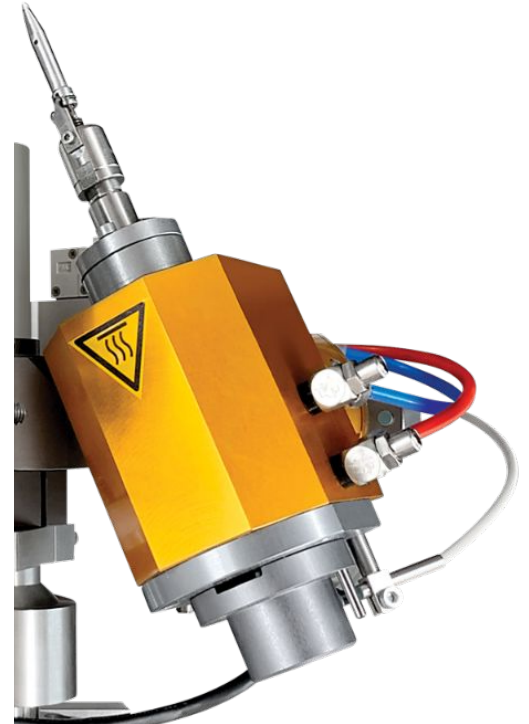
- Individual soldering parameters for each point:

Pre-heating time

Soldering temperature

Post-heating time

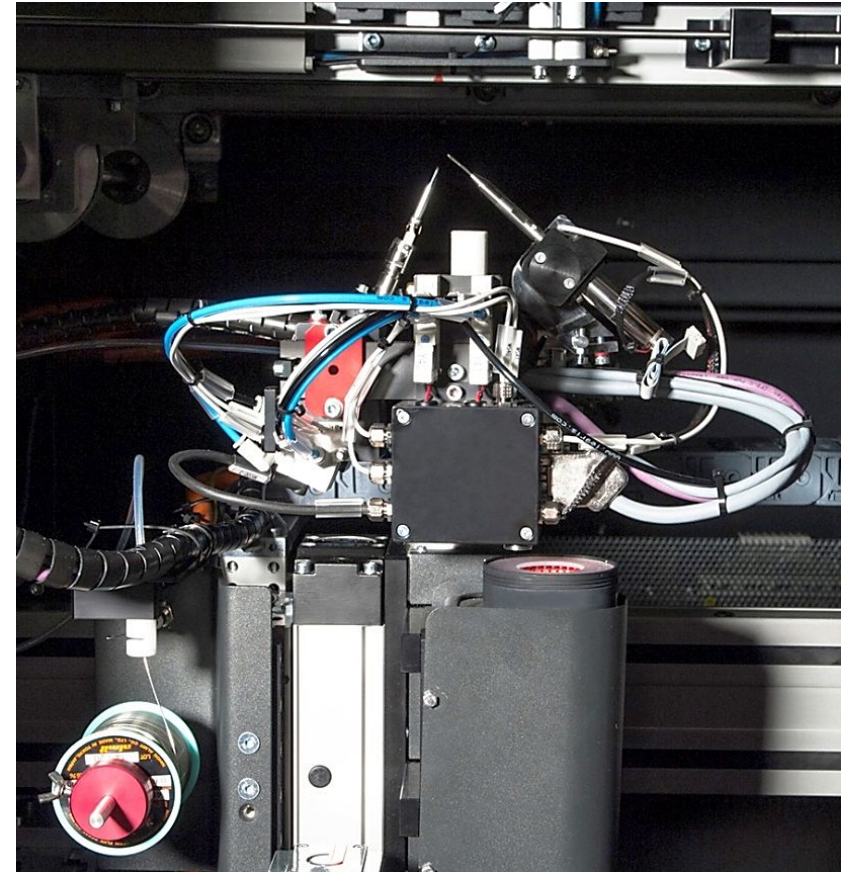
- Short time to soldering temperature
- Accurate temperature control



3. Iron soldering head

b. Solder wire feeder:

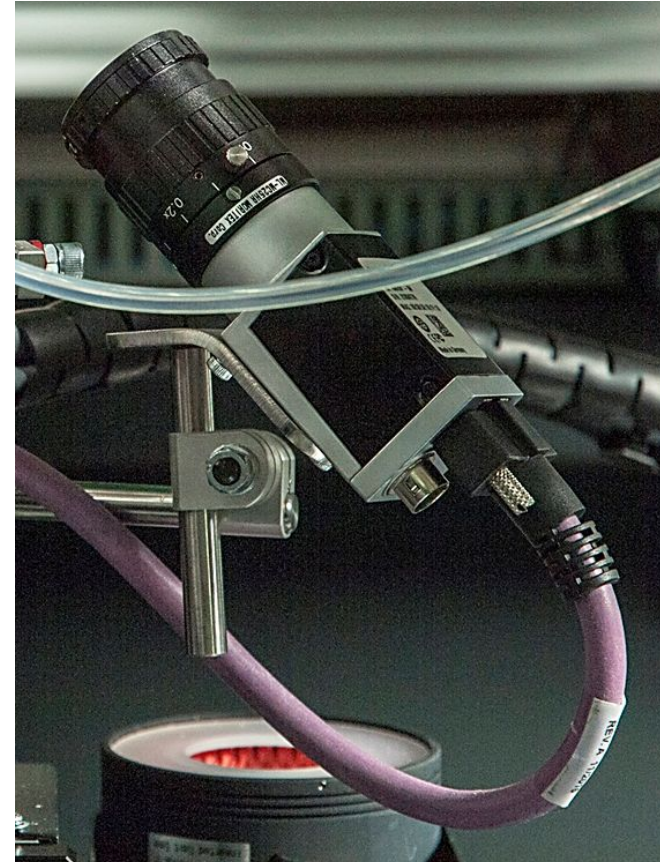
- Drives the solder alloy to the exact position
- Checks the amount been dispensed
- Quick and easy change of solder alloys



3. Iron soldering head

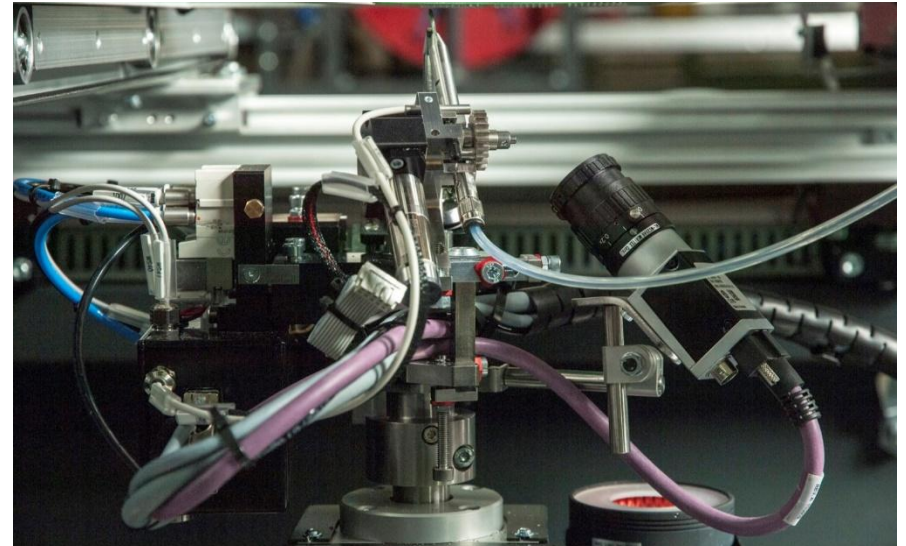
c. Vision system:

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



4. Bottom side selective soldering machine MPS700

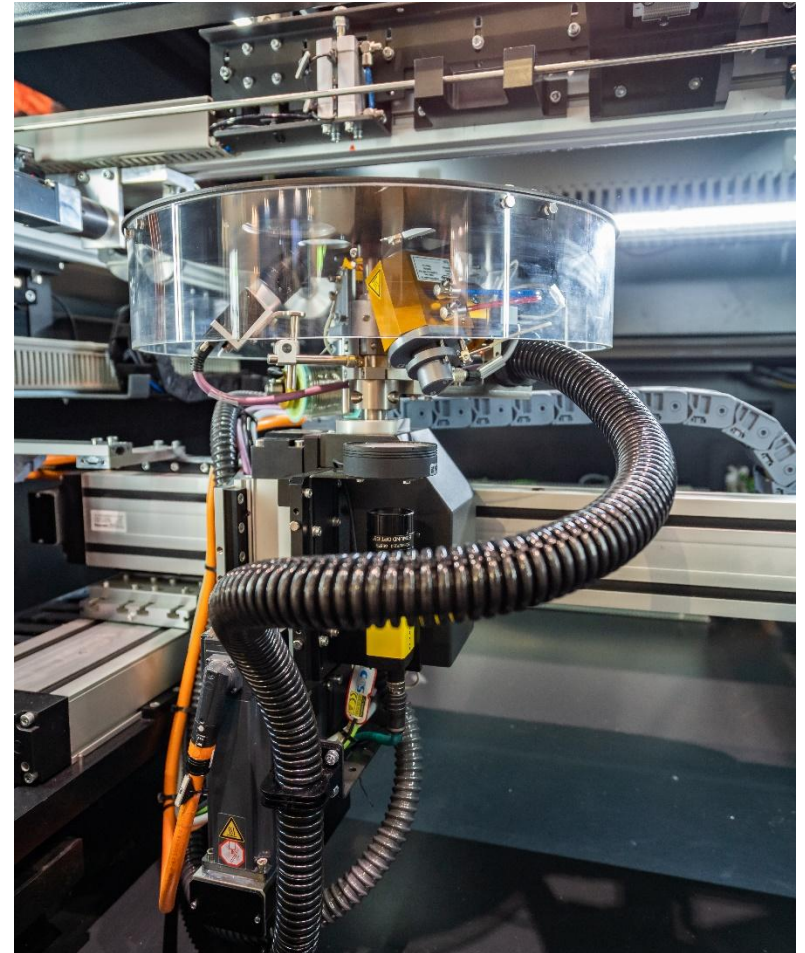
MPS700 an inline, **bottom-side** process that uses a robotic soldering iron.



4. Bottom side selective soldering machine MPS700

a. Cartesian robot:

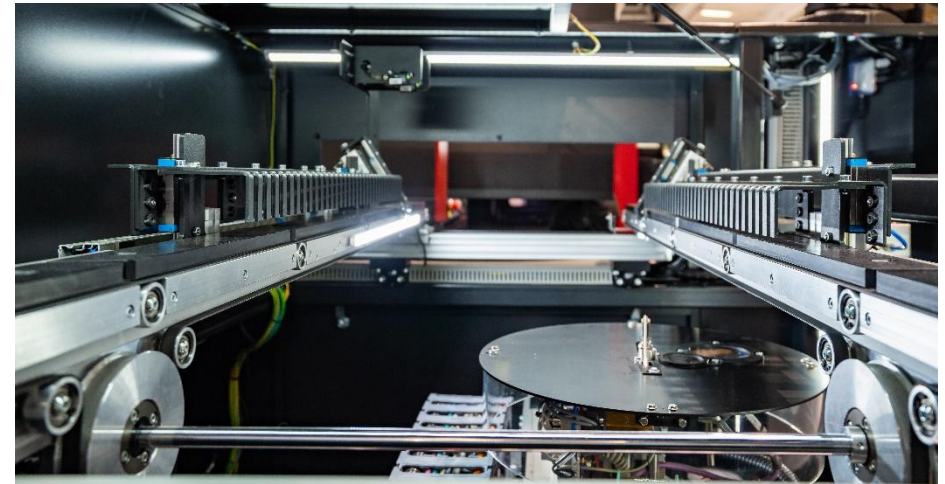
- 4 axes cartesian robot
- Can reach joints unreachable with fountains
- Teaching using inspection camera



4. Bottom side selective soldering machine MPS700

a. Conveyor system:

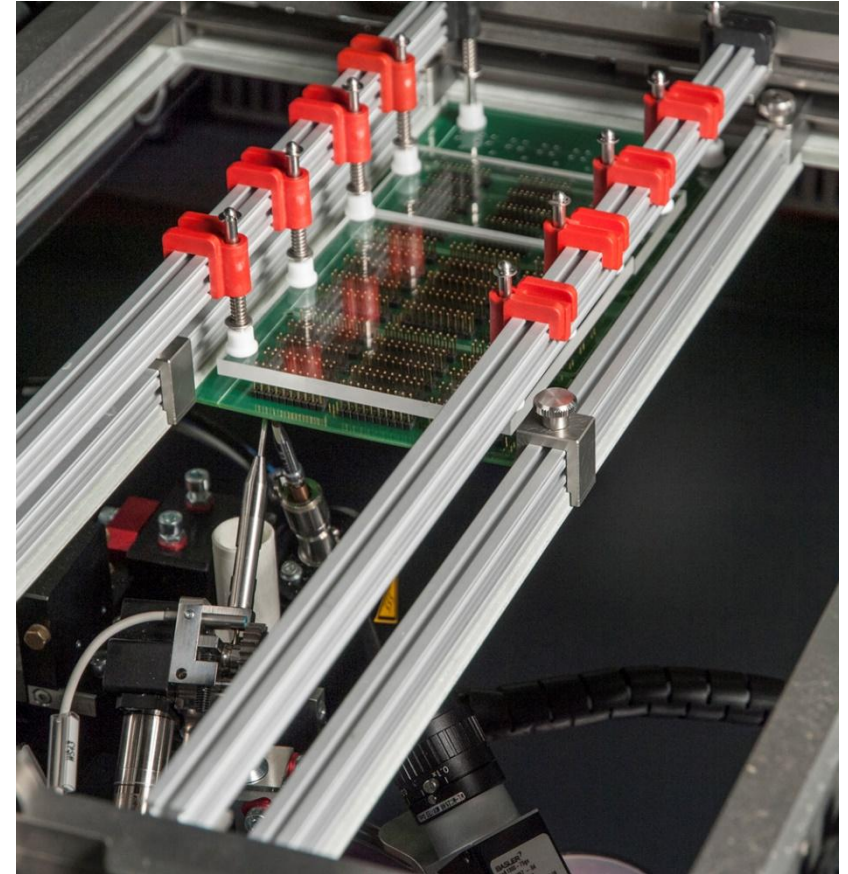
- Meets SMEMA standards
- Easy integration into production lines
- Adjustable wide from 50 to 700mm



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:

➡ Iron head can operate at its ideal temperature

➡ MPS700 processes high-mass joints



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Question and Answers
