TP90 Tinning Robot

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The TP90 represents the latest generation of dip tinning systems. It offers the following advantages:

- **Automated tinning for individual parts or small and medium production runs**
- **A single human-machine interface for managing timing and geometric positions**
- **Adaptable to many types of products: components, flat packs, connectors, reels, wires,…**
- **Stepper motor accuracy <1/10 mm**
- **Tin level detection allows for very precise tinning**
- **Control of speeds and tinning times to avoid peaks and stubs**
- **Ability to create programs for each component range**
- **Tool holder compatible with the older TP60P model and manual pantograph (flow bath or tank). Existing component holder strips can therefore be used.**
- **Securing the workstation. Only loading the tool and scraping require operator intervention** .

solderability tests .

Technical specifications	
Mass of the post	Approximately 30 kg (excluding tin bath)
Overall length	600 mm
Overall width	300 mm
Overall height	600 mm

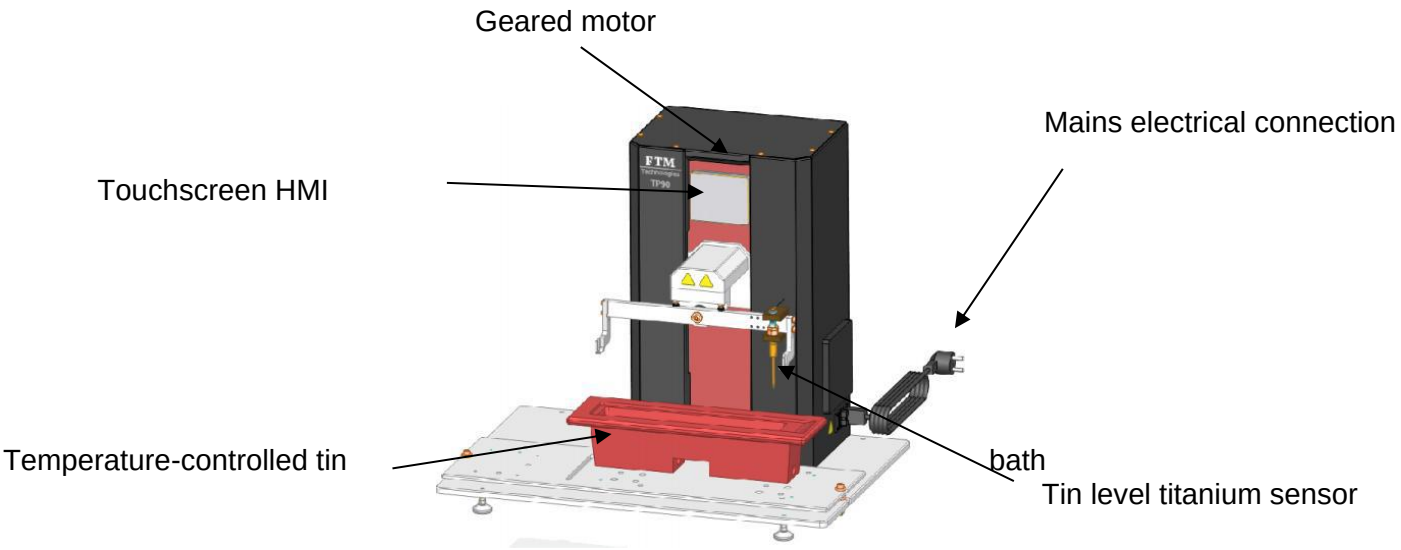
The TP90 tinning tool is designed to work with the FTM Technologies range of tinning tools:

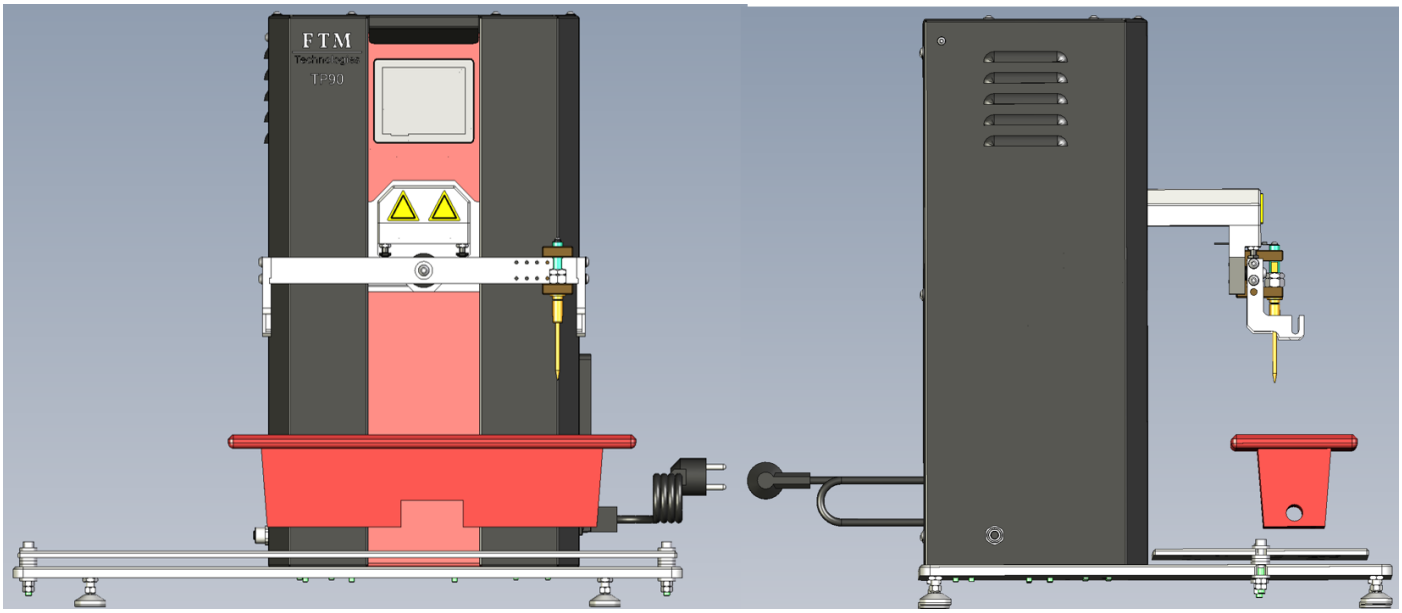
- Flow tray
- Flow tray with manual pantograph
- Manual pantograph for gilding bath
- Tinning bath:
  - BE 300X50
  - BE 300X50D (double tank)
  - BE 300X90
  - BE 300X90D (double tank)

Combining these different products will guarantee you a quality tinning process for all your types of parts.

1. Machine presentation

Machine overview

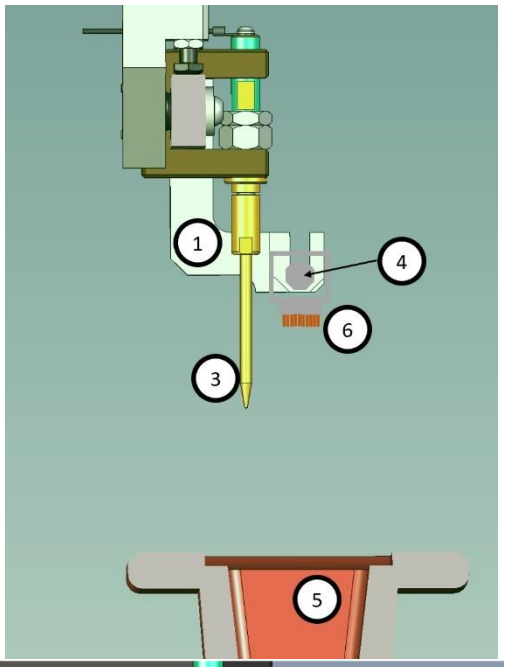




Operating cycle:

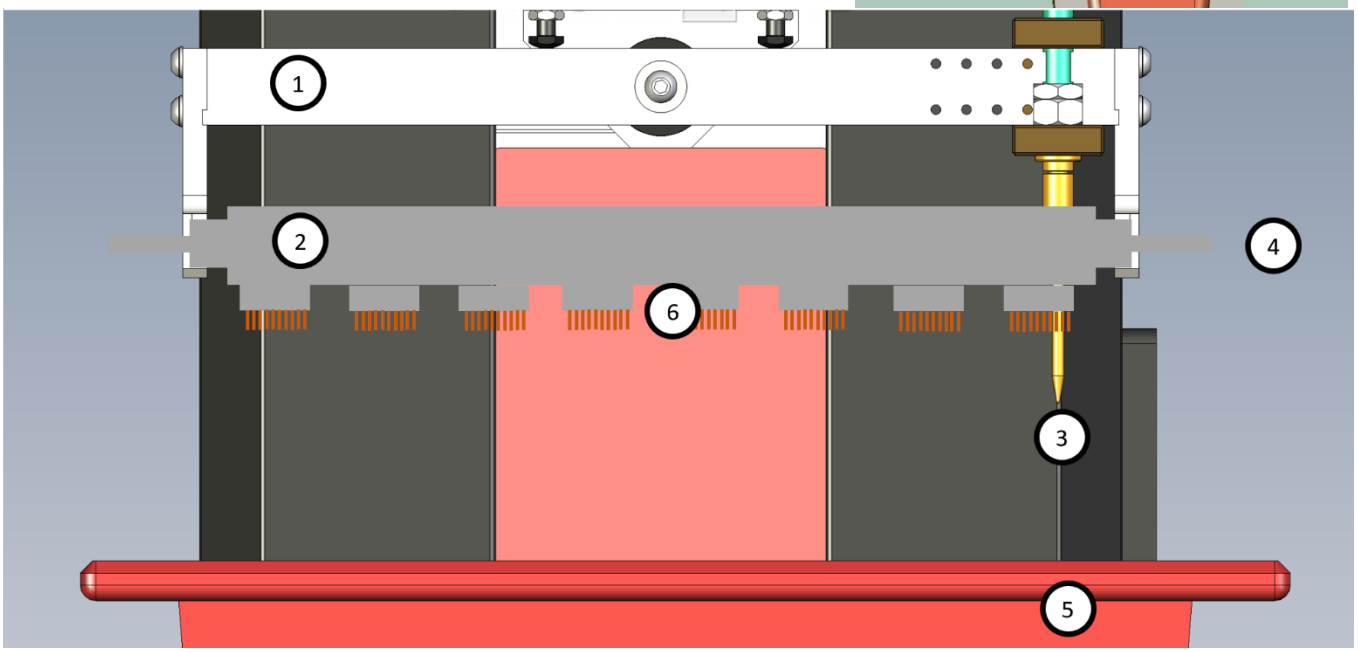
1) Selection and transfer of the program corresponding to the product to be tinned.
2) Setting up the contacts to be tinned on the fixture.
3) Cycle start.
4) Lowering the tool until the tin level is detected.
5) Movement of the tool towards the preheating position.
6) Lowering the fixture to the lower position for tinning.
7) Retracting the tool.

Detail of the installation area



Legend :

1. Tool holder console
2. Component holder tool
3. Titanium alloy level detection finger
4. Tool holder reference axis
5. Tin bath (supplied separately)
6. Tin-type connector

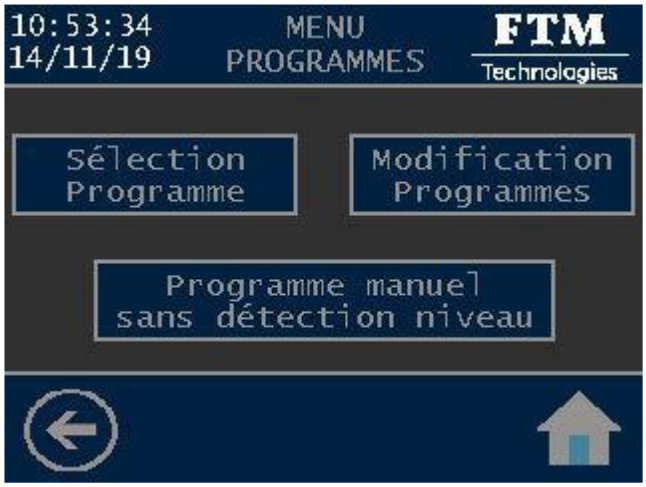


2. Human-Computer Interface

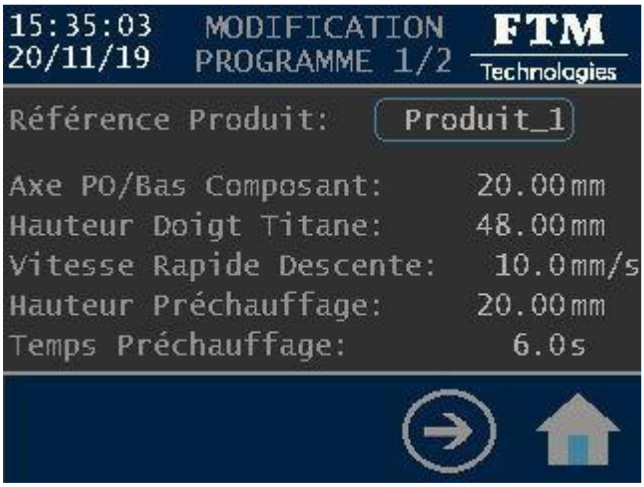
The TP90 offers a unique human-machine interface to manage timing and geometric positions.

The different programmable parameters are:

- Distance between the axis of the tool holder and the lowest point of the connector to be tinned (determined by the geometry of the setup)
- Preheating height (activation of the flow before tinning)
- Preheating time
- rapid descent speed
- Speed of entry into the tinning bath
- Tinning height
- Exit speed of the tinning bench
- Automatic mode (determination of the alloy level by titanium finger) or manual mode (manual approach and fixing of the contact point with the alloy by pressing on the PLC)
- Safety feature prevents operation when the bath temperature is too low (connection to the bath is required).
- Memorization of tinning programs



The interface allows you to create your programs for each range of components and also to modify them at any time in secure mode.



With its 75 x 60 mm touch interface, the TP90 is a user-friendly robot that adapts easily.

3. Complementary products for the tinning station

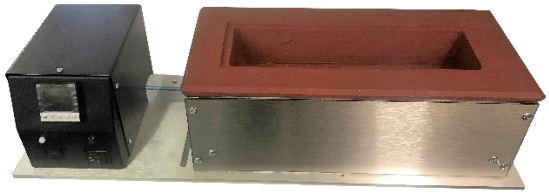
To create an optimal workstation, the TP90 can be combined with other products.

Tin bath

The TP90 accommodates a tin bath on its circuit board.
Four standard baths are suitable for the tinning robot: BE300X50, BE300X50D, BE300X90 and BE300X90D.

In the case of a preliminary deplating phase, requiring a separate bath to avoid contamination, several solutions are possible, all allowing the use of the same setup designed for the component or connector to be tinned:

- Use of two complete TP90 sets with a dedicated bath for each operation
- The gilding process was carried out using a manual pantograph and a dedicated bath.
- Degilding and tinning by half-batch with a single TP90 and a BE300X50D or BE300X90D double-tank bath



Fluxage

Accurate fluxing is essential for the success of the overall tinning procedure and requires mastery of several points:

- Accuracy of immersion in the flow tank,
- Anticipation of the capillary action phenomenon causing the alloy to rise along the prongs,
- Stream activation time.
- Control of flux evaporation.

A double-basin flow tank, topped with a pantograph, ensures a consistent level and allows for precise immersion. The shallow depth of the upper tank results in low flow consumption and frequent replenishment, guaranteeing high quality.

Mounting brackets and component holders

Thanks to its tool holder, the TP90 can accommodate various component holders. This allows it to adapt to many types of products: components, connectors, flat packs, reels, wires…
The tool holder is compatible with the TP60P model and the manual pantograph.

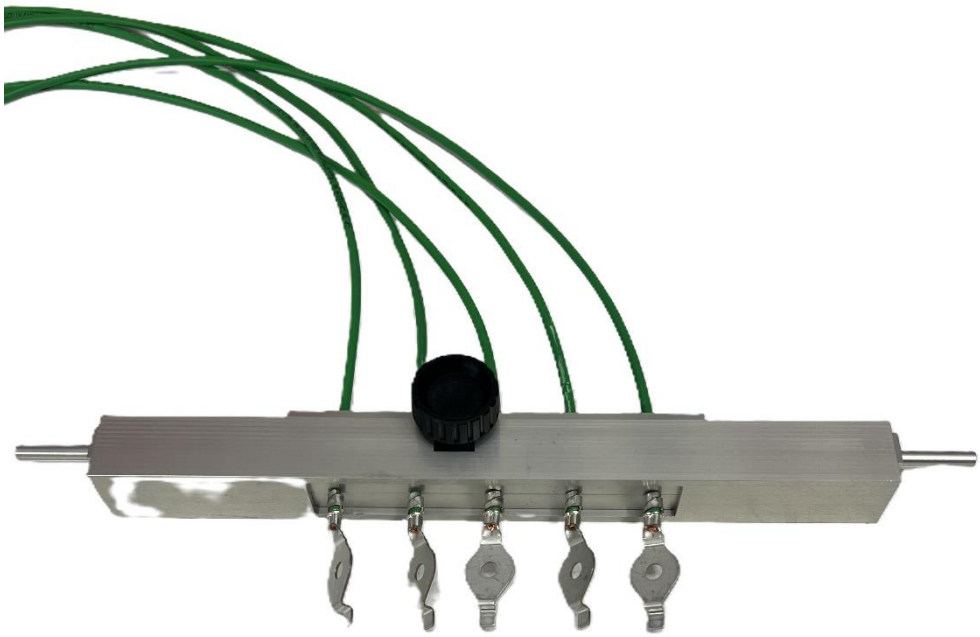
Examples of tools developed for various tinning applications. Contact us for your projects.





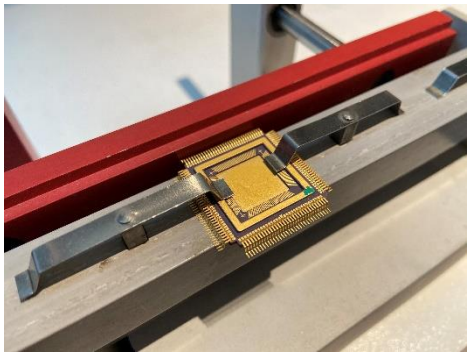


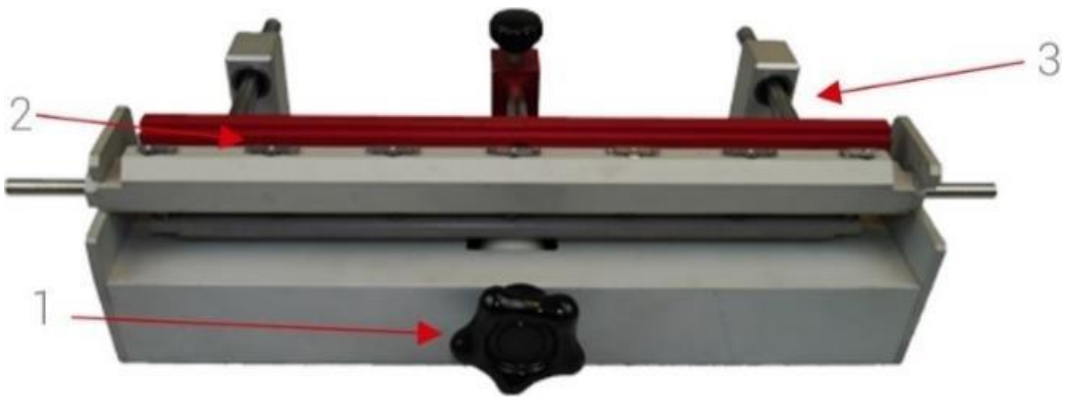




Component slot charger

This device was designed to facilitate the loading and unloading of component strips, particularly those containing hybrid components, flat packs , quad packs, etc. A button (1) activates a cam and lifts springs (2) to allow the components to pass through. Furthermore, its adjustable stop (3) allows the component to be held in a predetermined position on the strip, for example, by centering it so that both sides can be tinned by flipping the strip over.





4 Evolution TP90: Compact double-tank degilding and tinning station

The TP90 can now benefit from a compact, high-precision configuration combining degilding and tinning operations in a single station. This upgrade is available with the BE300X50D and BE300X90D dual-tank baths.

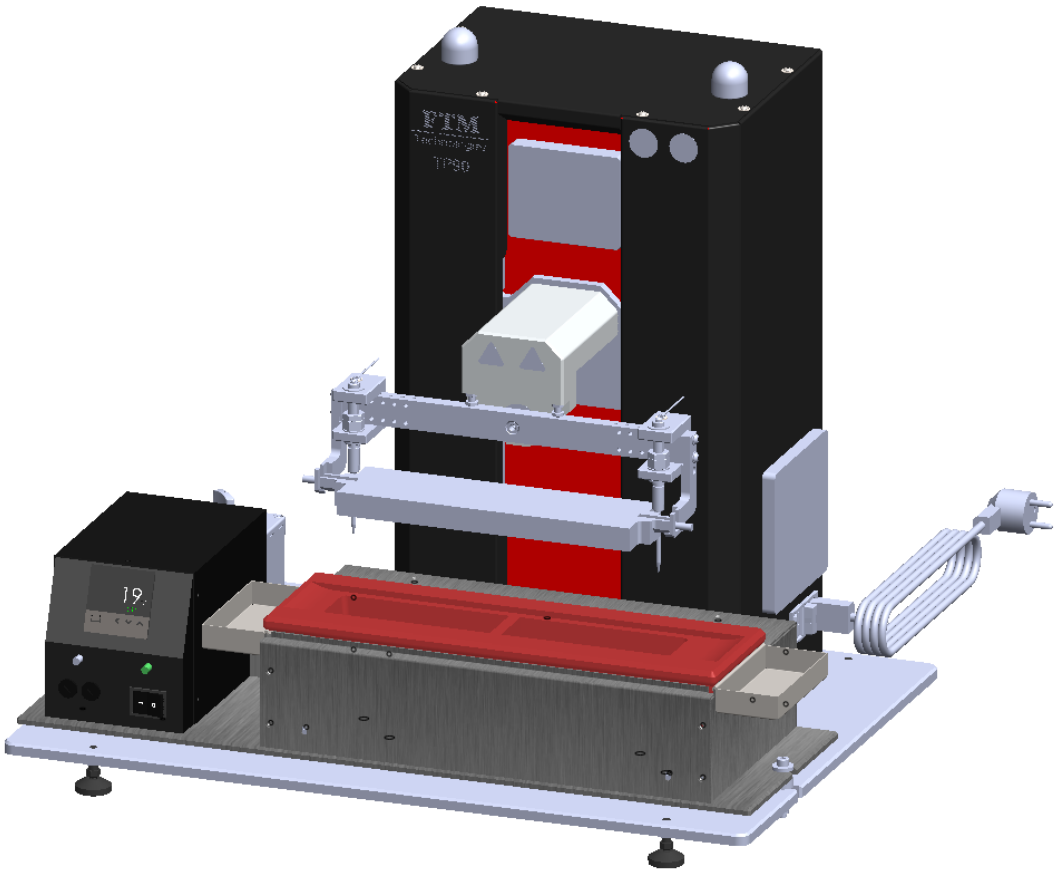
Operating principle

- The degilding and tinning operations are carried out in half-series.
- The same setup is maintained for both operations, which guarantees the repeatability of the process.
- The detection and immersion accuracy is identical on both baths.
- A switch allows the degilding bath or the tinning bath to be used alternately.
- A light distinguishes the detection finger in operation to ensure safe use.

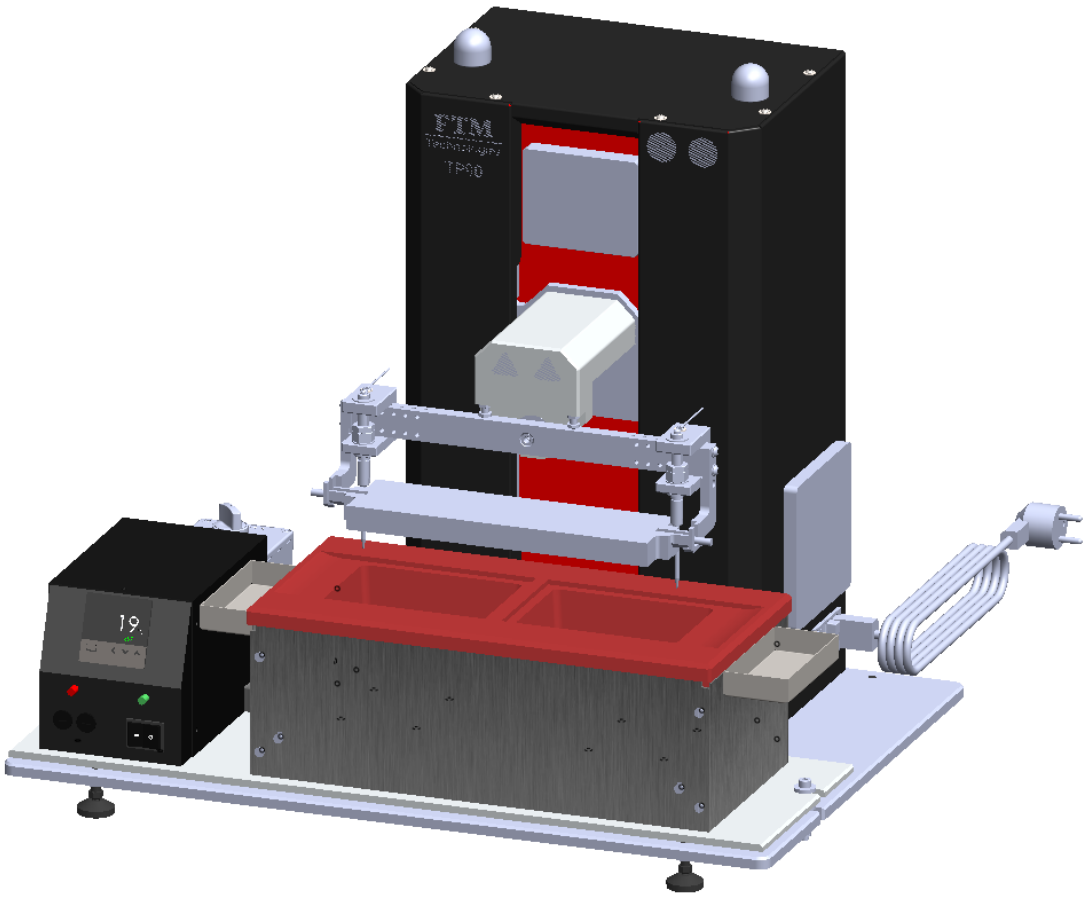
Optional second sensor finger

As an option, the TP90 can be fitted with a second titanium alloy level detection finger. Each bath then has its own reference finger, eliminating intermediate adjustments and ensuring consistent accuracy in both deplating and tinning.

Two-finger configurations



TP90 with bath BE300X50D



TP90 with bath BE300X90D

Customer benefit

This configuration allows two separate stations to be replaced by a single, compact and precise station, while maintaining the separation of baths and control of process parameters.