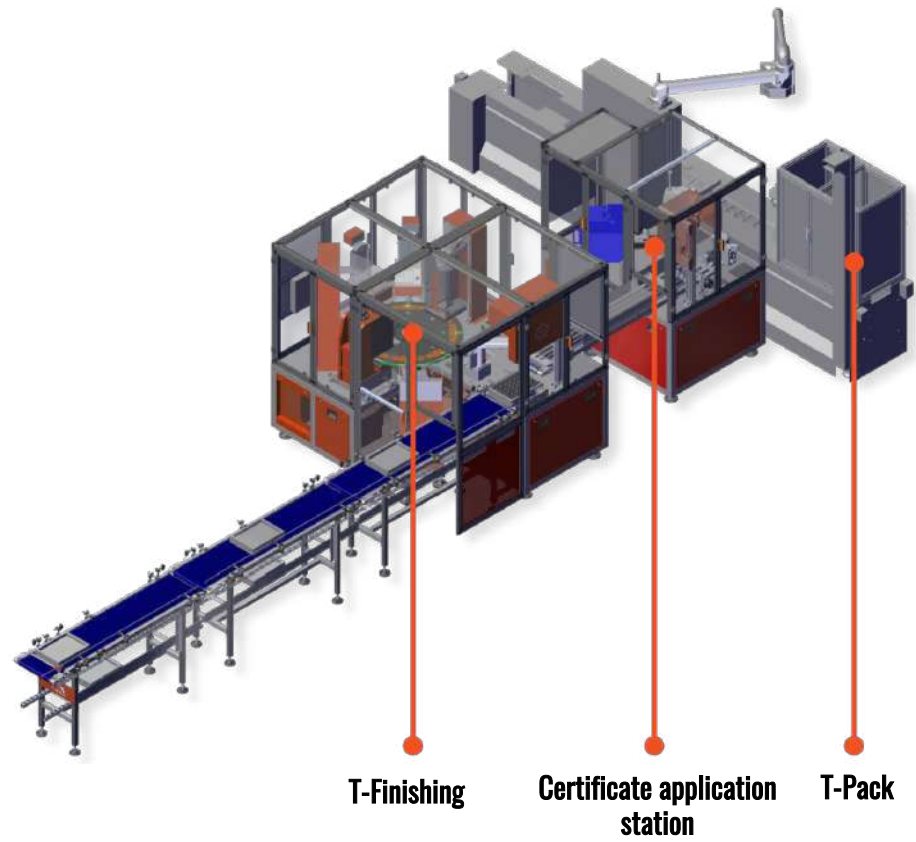


TAILORED AUTOMATION FOR THE HIGHEST ACCURACY

Each Tera Automation machine can be conceived **as part of a modular line** which can be combined according to the company's needs and facility space. **Each machine can be fitted to existing machines and a full line can be developed over time.**

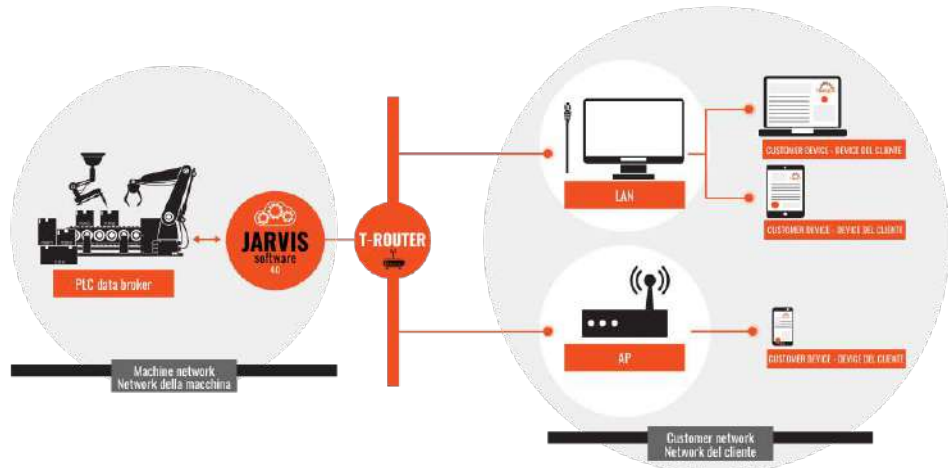
T-Finishing™ is a comprehensive finishing system for precious metal ingots, which, despite its already high automation level, can be combined to other machines, according to each operator's specific needs:



HOW TO CREATE YOUR SMART FACTORY

In smart factories data acquisition systems monitor physical processes, by creating a **virtual copy of real production** and sending accurate data to the supervisor.

JARVIS is an IT product owned by Tera Automation, which enables the **interaction and connection between machines and the company's ERP system**. While the machine works, the system creates a database with the **real-time production data**, as chosen by the client, i.e. variables related to the machine.



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HEADQUARTERS

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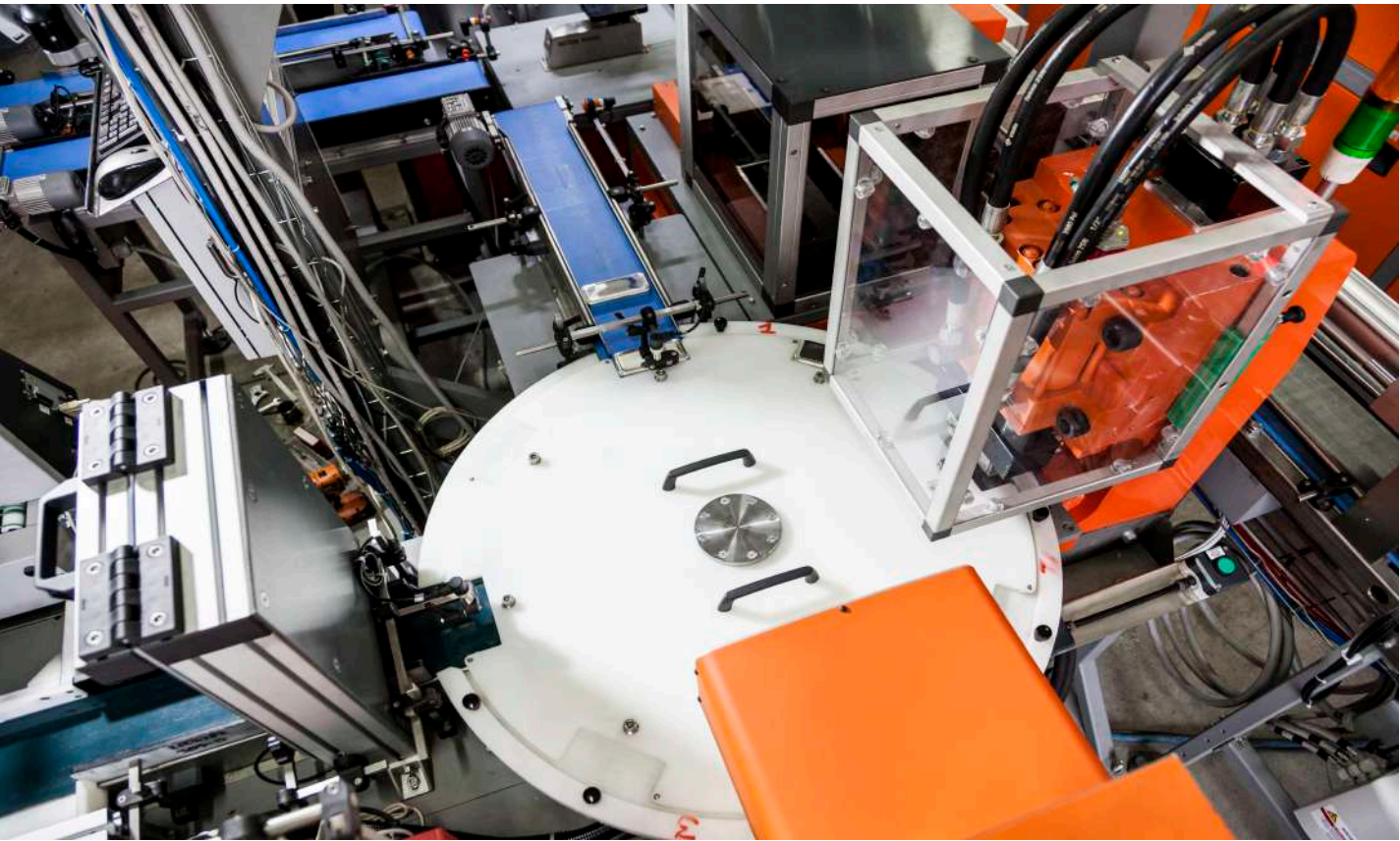
System for ingot serialization and stamping



Smart Manufacturing for the Future



forging competitive clients™



WHAT IS T-FINISHING

To say that T-Finishing™ is just a machine would be an understatement, since **it combines several tools necessary for the final processing steps of precious metal ingots in one working station.** The standard machine configuration includes a hydraulic press for the logo stamping and a micro-dot marking machine for the serialization of numerical data. However, thanks to its circular shape, the machine can be equipped with many integration tools, such as the laser marking machine or an optical visor (T-Photo Viewer) for quality control.

With the T-Finishing™ process, it is possible to **stamp the serial number and mark the company's logo on gold and silver ingots of any size, including 400-ounce Good Delivery gold ingots and 1,000-ounce Good Delivery silver ingots.**

This system can **significantly increase production levels**, optimize time dedicated to each process and reach full autonomy, if it is fitted with a robot which can pick and place ingots on the inlet and outlet conveyor belts.

T-Finishing is available as:



HOW IT WORKS

T-Finishing™ is an automated system which can encompass several working stations, such as: a **press for ingot stamping**, **T-Numbering™ for ingot serialization**, a **vision system for quality control** and/or **digital image acquisition of products and the following recording in the company's archives.**

Ingots can be placed manually one by one on the T-Finishing™ rotating table, or they can be placed on the inlet conveyor belt, so as to automate the production cycle.

The first stop for ingots is the **press**. The **rotating table** brings the ingot under the stamp, placing it in the dedicated working area. The press detects the presence of the ingot and carries out the **stamping**. Once it has finished, the table activates again and brings the next ingot under the stamp, as well as the stamped ingot to the following working station, the **T-Numbering™** machine.

In the second working station, the ingot is detected and **serialized (or marked)**, according to the customer's requests. The T-Numbering™ tool offers very accurate and high-quality performances and can easily mark codes, numbers, letters, images, etc. on several types of objects and surfaces made of metal and plastic. At the end of the process, the ingot is transferred to the outlet, where it is collected either manually or by the conveyor belt.

OPTIONAL ACCESSORIES



Conveyor Belts

Automated loading and unloading of ingots

Thanks to this accessory, operators only have to load the ingoing belt with precious metal ingots to be stamped and then they may go to manage other jobs. They can come back when the outgoing conveyor belt is full of stamped and numbered ingots and collect them.



T-Press - 12 or 23 tons

Press machine will stamp the Logo of the Company over the ingot. The high performance "C" shape hydraulic press is designed for this special automated system.

Different pressing powers available upon request.



T-Numbering - Standard or Large

There are two models available.

The Standard one services a marking area of 150 x 100 mm for any type of relative small ingots.

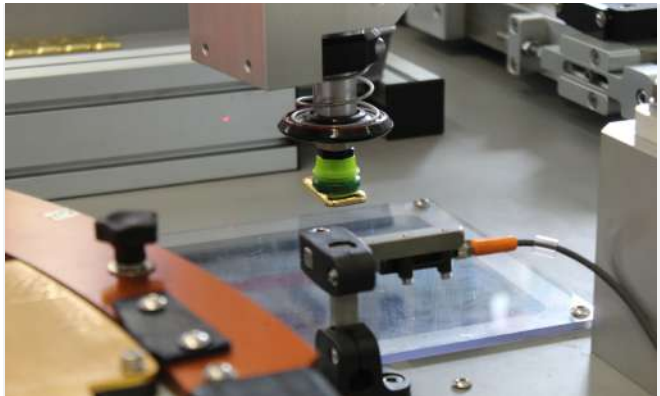
The Large Model services a marking area of 300 x 150 mm, designed for Good Delivery bars.



Rotating table for each shape of ingot

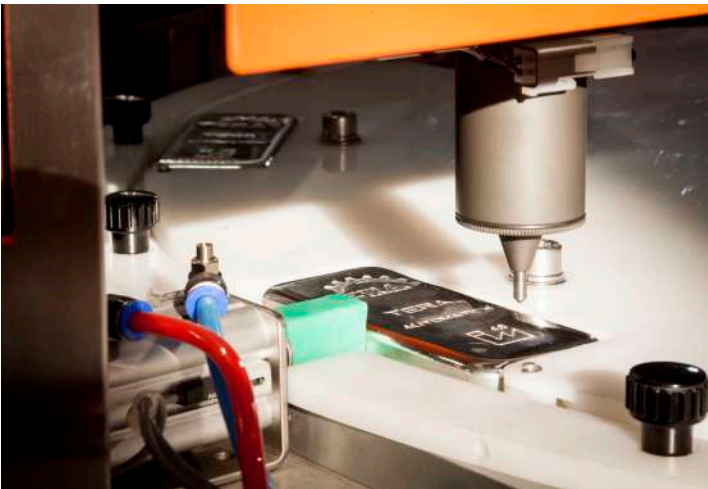
For each ingot size the operator can easily change the rotating table and fix the proper one accordingly.

You can quickly change the ingot templates according to the designs you choose thanks to our **new fast changeover system.**



Robots and more

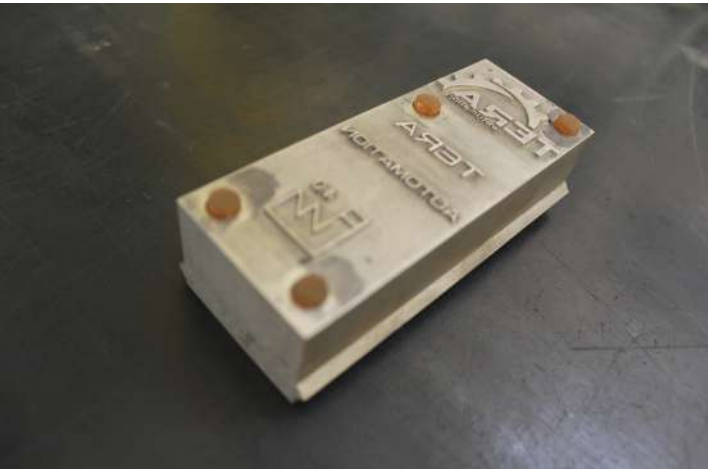
The whole process can be automated, if it is fitted with a robot and other working stations (i.e., laser marking machine, optical visor for quality control)



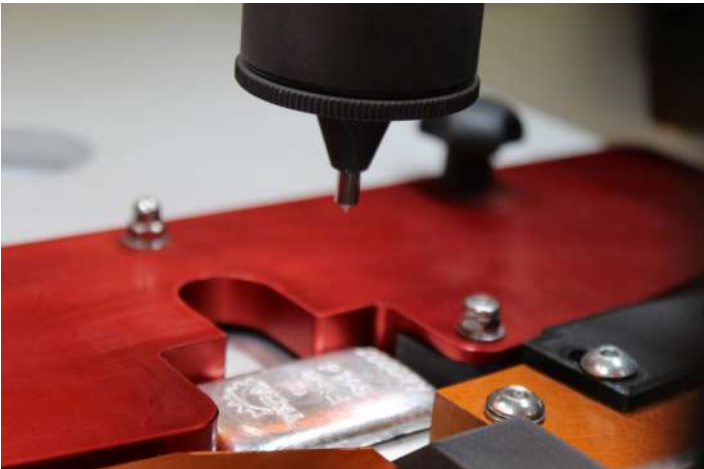
T-Numbering station



T-Press station



High quality stamping dies provided by Tera Automation



A serialized ingot and the stylus of the T-Numbering



Customized gold ingot



Customized T-Finishing model: T-Full Finishing (video on YouTube)



Quality control vision system



Stamped silver ingot



Control of the ingot quality



Control of the ingot quality