

PST line® II

In-line 3D Sputtering Coating System



In-line 3D Sputtering Coating System

Technology excellence

PST line® II

In-line 3D Sputtering Coating System

The new state-of-the-art PST Line II is an in-line modular system for applying a stable, high-quality varnish and metal coating to different substrate materials.

Its unparalleled capacity, can automatically process up to 7800 pieces per hour, while guaranteeing consistently excellent quality of finish, all while using significantly less varnish than traditional methods. It is the economical and eco-friendly answer to the needs of packaging manufacturers worldwide.

The advantages of the automated PST Line II coating system are indeed significant: Dramatic economy savings in staff and material cost. Increased capacity, faster changeovers and a process free of operator variables and intervention. Introducing "next level" efficiency to both the varnishing and metallization process.





A pioneering spirit that puts innovation at the heart of everything we do.

Built on the ability to draw on the best that the world has to offer, and to develop innovative products with anticipation of market needs, Tapematic has evolved over five decades into a truly global company that creates great value for its customers, and provides a secure future for its employees in every corner of the world where its machinery is installed.

Benefits of an automated line

Future-proof technology

Leap ahead of the competition and become a leader in the industry. High solid UV curable lacquer is the new standard, but it is much more expensive. Traditional always-on spraying techniques use up to 80% more varnish. With the PST Line II, each item can be varnished individually with minimum wastage.

Automatic process for less rejects

Automatic controlled processes ensure consistent results with less errors and less rejects. Loading and off-loading can be handled by our fully automated system. Built-in ionization and Class HEPA UH17 filtration, both ensure that no contamination enters the process area; therefore, ensuring the highest quality in the workflow. Quality control is fully automated and performed on every single item in order to guarantee total control on the process.

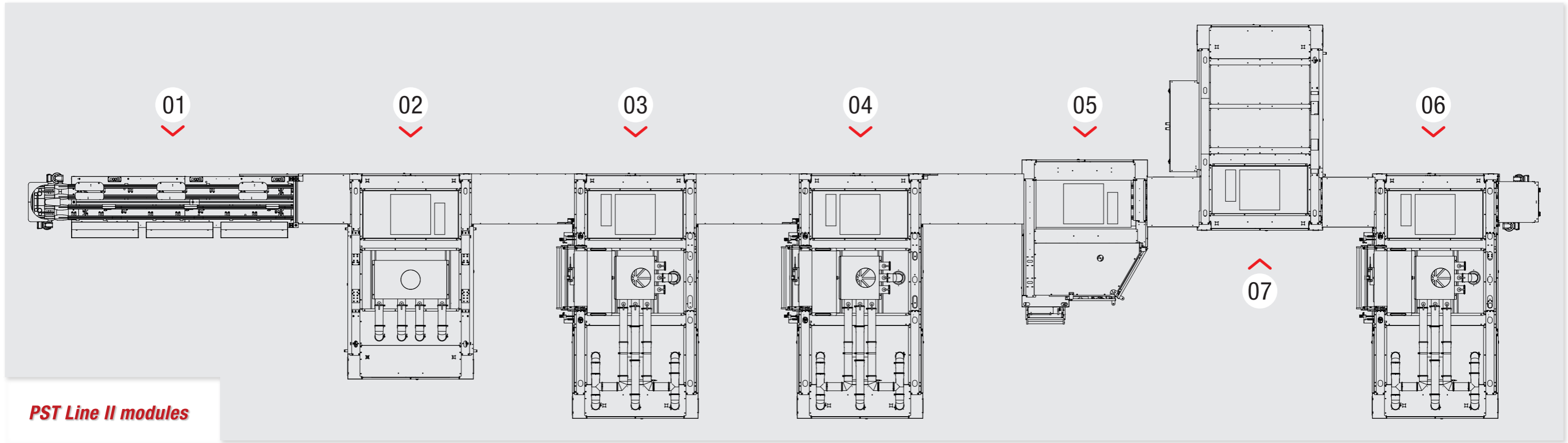
No wasteful batch testing

Say goodbye to wasteful batch testing, where thousands of pieces are tested simultaneously. The configuration for new products can be gradually refined in the setup phase. Each module can be initialised, monitored and fine tuned using a user-friendly, touch screen interface. New items can be set-up quickly and easily, and approved configurations can be stored for instant recall. This delivers major economies in both cost and speed.

Efficient and eco-friendly

The PST Line II is extremely efficient, with much lower energy consumption than traditional lines and much reduced varnish usage. There is no toxic waste-water to process after spraying, or other unnecessary waste products. No toxic chrome derivatives are used in the metallisation process. Customers who have already installed the PST Line are now being recognised environmentally with Awards from around the world.





PST Line II modules

01 > MANUAL LOADING

Loading and offloading can either be performed manually or automatically. The manual module is composed by six ergonomic stations where the parts can be loaded, inspected and/or offloaded according to the desired workflow of the PST Line II.

03 > PRIMER COATING

The BT Coating II module is a state-of-the-art turnkey system for automated spraying of all types of primer varnish. Extremely efficient, it sprays accurately, on-demand using only the minimum amount of varnish necessary. The primer module will be helpful when the substrate requires additional care. This module can be enabled or disabled according to requirement.

05 > SPUTTERING DEPOSITION

The Tapematic S8+³ sputtering module will enable you to sputter three dimensional objects in a streamlined, efficient, automated and completely reliable process. Thanks to its unique load-lock design, it is capable of sputtering 3D items while simultaneously loading and off-loading, thereby always maintaining the sputtering chamber in optimal high vacuum.

07 > AUTOMATIC UNLOADING

Camera based optical inspection is integrated using High-resolution sampling technology. This allows the machine can inspect and unload each and every piece for manufacturing flaws in shape, coating or imperfections without any operator presence or intervention.

02 > CLEANING & TREATMENT

This module is designed for multiple cleaning processes and allows for customised surface treatments to be installed. Antistatic air blows and multiple brushes are used to remove any foreign particles that may be present on the object surface. Plasma torches and flame burners promote the surface activation that allows the item to proceed to the next process station of the PST Line II.

04 > UV BASE COATING

The BT Coating II module is a state-of-the-art turnkey system for automated spraying of all types of UV base varnish. Extremely efficient, it sprays accurately, on-demand and uses only the minimum amount of varnish necessary.

06 > UV TOP COATING

The BT Coating II module is a state-of-the-art turnkey system for automated spraying of all types of UV top Coat varnish to protect the metallised layer and provide wear resistance. Extremely efficient, it sprays accurately on-demand using only the minimum amount of varnish necessary.





Tapematic is pro-active at manufacturing equipment that is both environmentally friendly in its operation as well as environmentally efficient with what it produces. This, in turn, avoids or minimizes the impact on the environment.



PST Line II key features

- *Larger capacity with processing speeds to easily compete with existing non-automated systems.*
- *An integral in-line process that eliminates all intermediate manual steps.*
- *Eliminates the possibility of contamination during the entire process.*
- *Utilisation of technology to provide an eco-friendly and cost effective alternative.*
- *Modular system to allow the highest level of customisation.*
- *Facilitates better control of the entire process.*
- *Allows all cosmetic plastic producers the opportunity to bring the entire decoration process in-house.*
- *Enables decoration service providers to be more flexible and satisfy reduced "time to market" targets.*

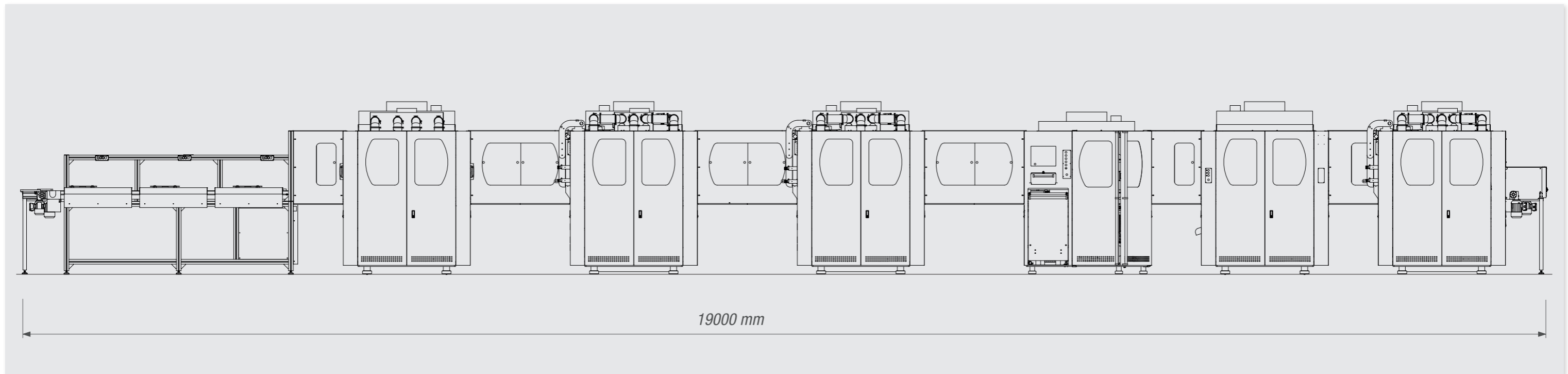
50 years of innovations

Tapematic is very sensitive to the damage being done to the environment by industry and therefore very passionate about designing and manufacturing machinery with a high-energy efficiency and reduction to an absolute minimum, any emissions created in the production process: "Green can be seen in everything we do".

A long list of Tapematic Patents since 1970 demonstrates our pioneering spirit in the field of technical innovation. We are very pleased to announce our latest additions to this list: "In 2019, Tapematic communicate the issuance of three European Patents: EP2500448B1, EP3015176B1, EP2692450B1 as well as US Patent: 9487857 pertaining to the PST Line system".

These patents represent Tapematic's continuous evolvement and application of technology for the decoration of three-dimensional objects for a multitude of different industries such as food, cosmetics, pharmaceutical and automotive.





PST Line II technical data

Substrate	
Substrate material	ABS, PE, HDPE, PC, PS, PA, PET, PVC, SAN, PPA, PP, PMMA, POM, Glass, Metal
Substrate dimension	Ø 102 x 130 h mm (Custom dimension upon request)
Handling process	
Loading	Automated robot sorting system (optional)
Transport	Modular chain conveyor system
Reject	Reject identification
Quality check	3D vision system (optional)
Offloading	Automated discharge, multiple boxes
Clean room environment	Built in class 100 Hepa filter
Surface preparation	
Surface cleaning	Air deioniser and dust removal station
Brush cleaning	Multiple controlled brush stations
Flame treatment	Multiple controlled burners
Plasma treatment	Multiple robotized torches (optional)
Coating process	
Lacquer	High solid UV curable lacquer
Spray	High performance spray coating system
Flash off	Controlled quartz infrared oven
Curing	Water cooled 3D UV lamps
Sputtering process	
Target material	Aluminum, Silver, Gold, Stainless Steel, Chrome, Copper, Titanium
Vacuum chamber	Load lock system to maintain consistent high vacuum
Production	
Cycle time	Up to 7800 pcs/hr
Yield	95%
Up-time	85%

Physical	
Dimensions	5000 w x 19000 l x 2100 h mm
Weight	17000 kg
Utilities	
Power	400V 3 phase 50/60 Hz 65 k VA
Air	6 bar 600 N l/min
Vacuum	- 0.8 bar 10 m3/hr
Water	5 bar 34 lt./min, 16-18°C, pH 6-8, dH 4-8
Water	3 bar 40 lt./min, 16-18°C, deionized, <10 µS
Argon	2 bar, 50 sccm, purity 99.999%
Environment	
Working area	8 m x 24 m ceiling height minimum 3 m
Temperature	18 - 24 °C
Relative Humidity	35 - 55% non condensing
Safety	
CE	Complies with all current regulations
Patents	
European patent granted	EP2500448B1, EP3015176B1, EP2692450B1
United States patent granted	US9487857

We reserve the right to make modifications without prior notice



Tapematic Head office

Via Vimercate 42
20876 Ornago MB Italy
Tel +39 039 6010145
italy@tapematic.it

Tapematic USA

6881 Kingspointe Parkway, Suite A-9
Orlando Florida 32819 USA
Tel: +1 407 852 1901
america@tapematic.com

Tapematic UK

Hangar 3 Lodge Farm
Nightingale Hall Road
Earls Colne Airfield
Colchester Essex CO6 2NR
Tel.: +44 1787 220266
uk@tapematic.com

Tapematic Asia

Flat F.2/F, Block 1
Tung Chun Industrial Building
9-11 Cheung Wing road, Kwai Chung
New Territories, Hong Kong
Tel: +852 9661 9777
hesswong@yahoo.com

