The right choice

In-line 3D Sputtering Coating System

Fully automated
Whenever high-end metallic surfaces on objects are required, the PST Line is the sustainable alternative to today's conventional production technologies. PST Line processes consists of three layers: a UV lacquer base coat, a thin metallic decorative sputtered film, and a protective UV lacquer top coat. The base coat serves to equalize any irregularities of the manufacturing process of the substrate. On top of the base coat, a thin metallic film is deposited using high vacuum sputtering technology. On top of the thin metallic film, another lacquer coating is applied. The top coat serves as a protection of the sputtered metallic film which is also extremely durable and stable. The PST Line process is environmentally friendly due to low energy consumption and the avoidance of special wastes. No environmentally harmful chrome derivatives are used in the process.
Tapematic presents the PST Line. A revolutionary, fully automated system capable of applying a UV base-coat, 3D metallisation and a UV top-coat together with final inspection utilizing a Hi-Dev optical camera quality control system. The result is a turnkey line for the complete, self-contained and in-house production of finished items. The PST Line incorporates two Tapematic BT Coating stations, the most efficient UV varnishing system available anywhere today. Each 3D Part can be varnished in as little as 150 milliseconds, using high solid UV curable lacquer. Combined with the Tapematic S8++ sputtering system, you are guaranteed the most environmentally friendly and cost effective solution available today for metallisation and varnishing of 3D objects. The PST Line loading and unloading are linked by a fully automated handling system that is custom designed to customer specific product requirements. Built-in ionization and Class 100 HEPA filtration guarantees that no contamination enters the process area; therefore ensuring total environmental quality in the production process.

An industrial grade PLC and precision servomotors control all functions and handling. The process control is monitored and adjusted using a user-friendly, touch screen interface. The PST Line is the ultimate solution for any company that wishes to have control of in-house metal coating or parts, thereby guaranteeing their customers, in turn, a stable, high-quality coating and finish for their products.

A pioneering spirit that puts innovation at the heart of everything we do.
The sputtering technology is well established and widely implemented in optical disc manufacturing; an area that Tapematic specializes in, having manufactured stand-alone sputtering and complete production lines for more than 20 years. CDs, DVDs and Blu Ray discs are typically sputtered in less than 2 seconds including handling to and from the sputtering chamber.

The PST Line can be used to sputter a wide range of materials such as Aluminum, Gold, Silver, Chromium, Stainless Steel, Brass, Copper, Titanium and many others. It guarantees the lowest possible cost per item, even compared to traditional PVD or batch sputtering systems.
Technical data

**Substrate**
- Substrate material: PE, HDPE, PC, PET, PS, PP, PA, ABS, SAN, Nylon, Glass, Metal
- Substrate dimension: Ø 60 x 135 h mm (Custom dimension upon request)

**Handling process**
- Loading: Automated pick-up from vibratory feeder module
- Transport: Beach® Varioflow chain conveyor system
- Reject: Reject identification via RFID technology
- Offloading: Automated discharge
- Clean room environment: Built in class 100,000

**Surface preparation**
- Surface cleaning: Air deioniser and dust removal station
- Surface treatment: Plasma - flame treatment station

**Coating process**
- Lacquer: High solid UV curable lacquer
- Spray: High-performance spray coating system
- Flash off: Controlled quartz infrared oven
- Curing: Water cooled UV lamp

**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: 1 tray in less than 6 seconds
- Yield: 95%
- Up-time: 95%

**Physical**
- Dimensions: 10200 w x 2600 l x 2100 h mm
- Weight: 2400 kg

**Utilities**
- Power: 400V 3 phase, 50/60 Hz, 45 kVA
- Air: 6 bar, 300 l/min
- Vacuum: -0.8 bar, 10 m³/hr
- Water: 5 bar, 34 l/min, 20-22°C, pH 6-8, dH 4-8
- Argon: 0.3 - 0.5 bar, 20 sccm, purity 99.999%

**Environment**
- Work area: 12 m x 4 m ceiling height minimum 3 m
- Temperature: 18 - 24 °C
- Relative Humidity: 55 - 65% non condensing

**Safety**
- CE: Complies with all current regulations

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.

Our simple requirements: be the best