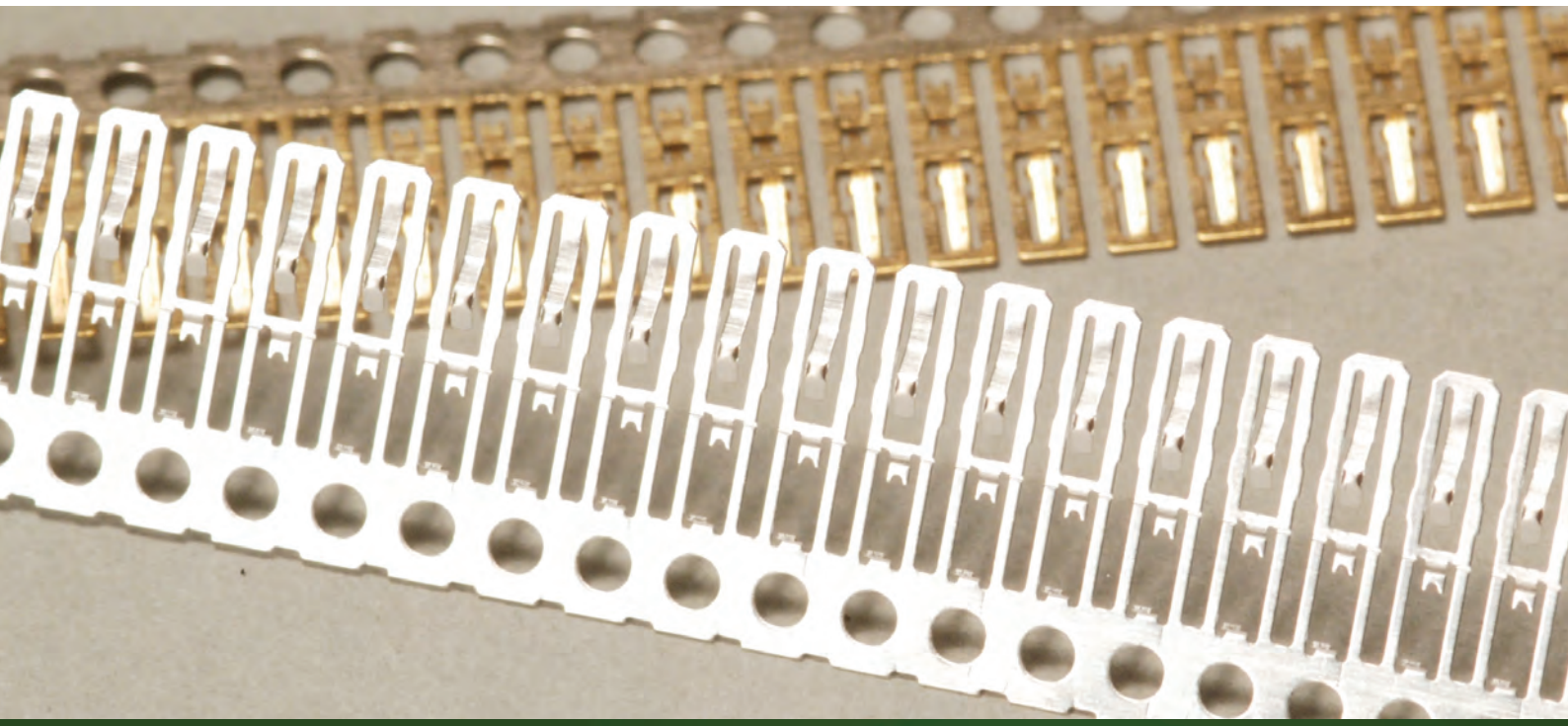
REELCOATER™



Reel-to-reel PVD

The high-productivity ReelCoater™ PVD (physical vapor deposition) system for reel-to-reel coating of metal strips opens a new world of surface treatment opportunities.

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Cost efficient and environmentally sustainable replacement of plating

The ReelCoater system is designed for the special needs of the electrical component industry. It allows a new world of coating materials for electronics and addresses the environmental challenges of today's manufacturing lines.

FLEXIBLE, EFFICIENT AND EASY TO INTEGRATE

The ReelCoater is designed for PVD coating of metal strips reel-to-reel. It can be set up to handle plain flat strip, as well as stamped strip with 2-dimensional and 3-dimensional shapes.

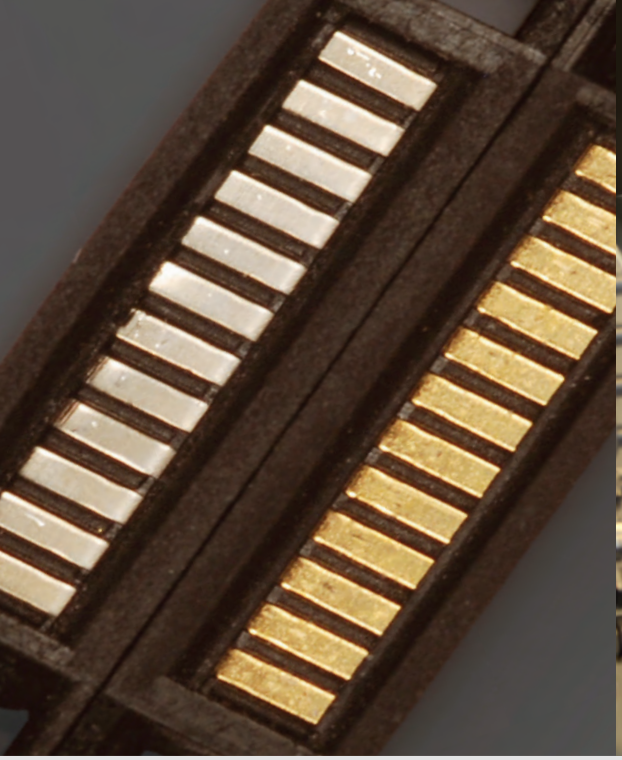
It is a standalone coating equipment with a small footprint, yet with productivity similar to a modern gold plating line. Depending on the geometry of the strips, multiple reels can be loaded and up to eight strips can be coated in parallel. The reels and strip material are loaded inside the system vacuum chamber to allow optimal coating conditions under high vacuum. Highly efficient vacuum pumps ensure maximized productive system uptime

The ReelCoater has a modular configuration, where system modules can be added or removed and where the strip type can be changed. Layered coatings of different materials can be made in the same ReelCoater line.

Apart from coating materials, the system only requires electrical power, cooling water, compressed air, Argon process gas for the deposition and clean air for ventilation. Simple utilities, easy operation and small footprint make the ReelCoater easy to integrate into existing reel-to-reel manufacturing.

SILVER MAXPHASE™ – LOW COST REPLACEMENT OF GOLD

The ReelCoater allows coating of the unique Silver MaxPhase contact coating that replaces high-cost plated gold. The Silver MaxPhase metal alloy provides electrical properties and resistance to corrosion and wear that were earlier only expected from expensive noble metals. Silver MaxPhase is qualified for components that were earlier gold plated. This includes low voltage and low contact force applications with many wear cycles, e.g. battery and I/O connectors for mobile phones.



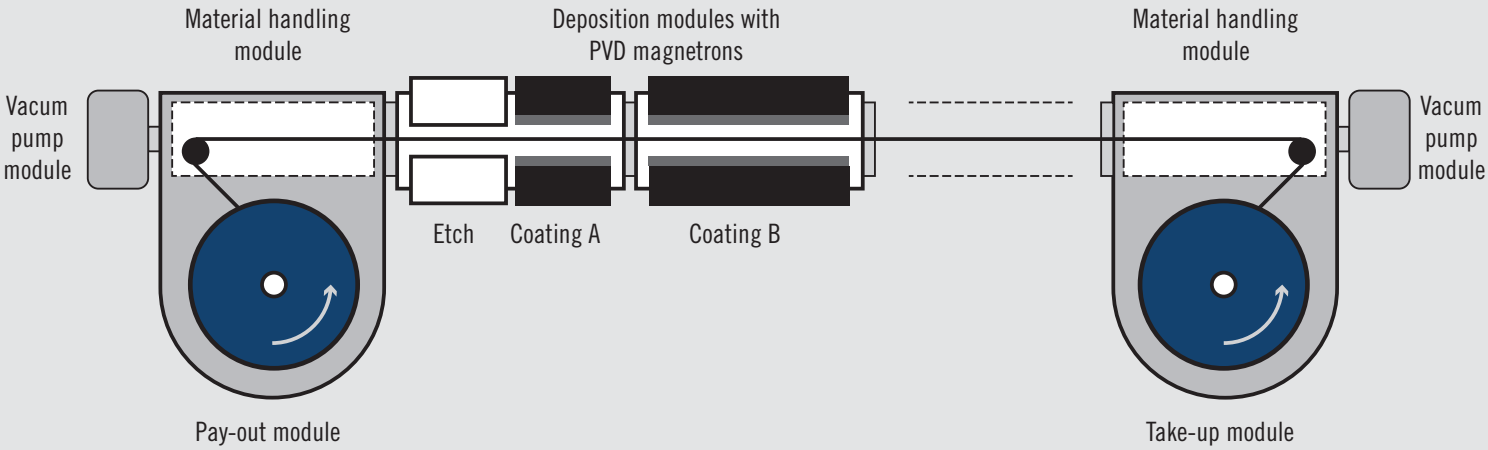
Green production technology

Highly hazardous cyanide is used in wet chemical plating of gold and other noble metals. Better insights of environmental and human risks of plating have resulted in increased restrictions and stop in plating licenses in key regions for electronics manufacturing, e.g. in China. In contrast to plating, reel-to-reel PVD is a dry and clean method that does not involve health threatening materials.

Hence, Silver MaxPhase does not require water and waste treatment facilities or government licenses for production lines.

PVD is the environmentally sustainable choice for surface treatment in modern electronics production.

Top-down view of the ReelCoater.
Multiple reels and strips are loaded inside the vacuum chamber. The strips are fed continuously through the system, where they are clean etched and coated using magnetron sputtering. A modular architecture allows deposition modules to be added or removed

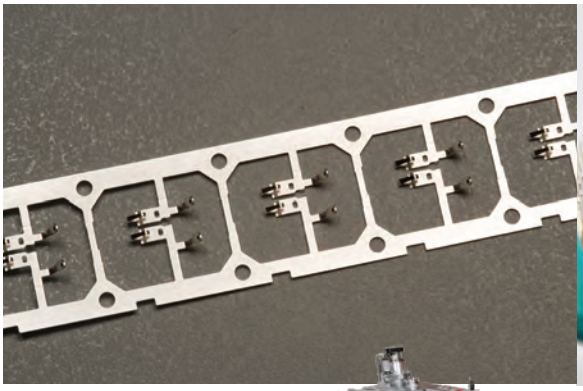


REELCOATER

Technical data

Reel size	Up to 1000 mm diameter
Strip speed	0-5 m/min (process dependent)
Number of reels/strips in parallel	Up to 8 (strip geometry and process dependent)
Deposition source height	100 mm
Deposition source length	950 mm or 300 mm
Source orientation	Front, back, or both
Sources per deposition module	Two 950 mm sources, front and back, or four 300 mm sources
Number of deposition modules	Customer defined, typically 1-3
Base pressure	<1x10-5 Torr
Process options	DC magnetron sputtering
	Ar plasma etch
	Strip biasing
Coatings	Metals (Cu, Cr, Ti, Ag, Au, etc.)
	Metal alloys (Silver MaxPhase™, Ni-alloys, Cu-alloys, stainless steel, etc.)
	Single coating, or layered coatings (two or more)
Strip types	Plain and stamped, 2 and 3-dimensional
	Cu-alloys, stainless steel, Aluminum, plastics, etc.
Installation requirements	
- Electricity	3-phase, 400V, 63A (typical), 50Hz
- Cooling water	>15 l/min (typical), 15°-20°C (non-condensing)
- Compressed air	6-7 bar
- Process gas	Ar (typical)

Note: These specifications can be changed without notice.



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