

PLASTICOATER™

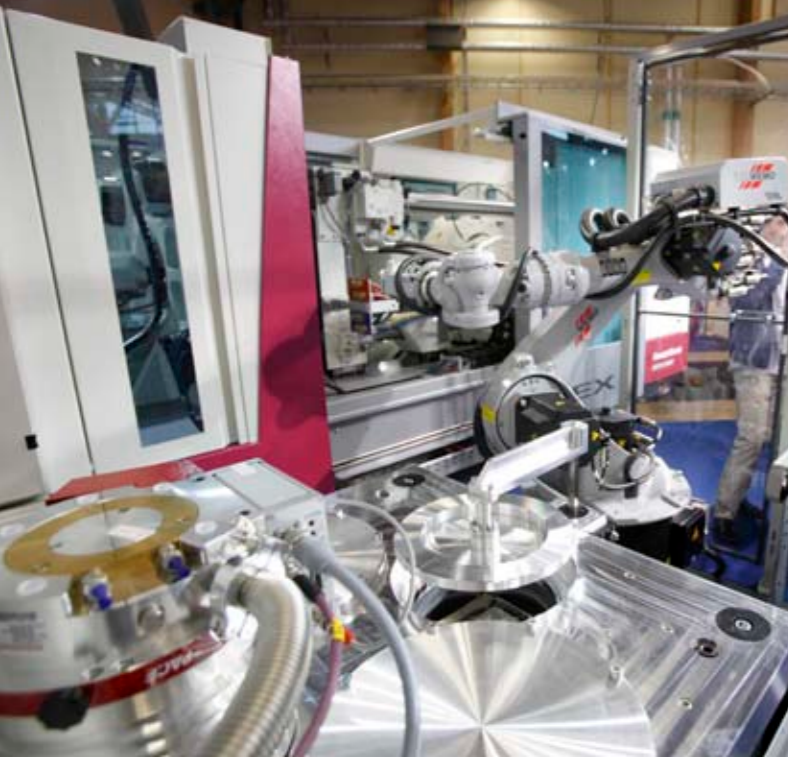


Integrated metallization

Metallization of injection molded plastic has never been easier. The PlastiCoater™ PVD metallization unit is designed to work alongside and in synchronization with a molding machine, creating a truly integrated production unit.

Add a box and increase the value of your product — no additional manual handling or know-how required.

IMPACT
COATINGS



Easy to use metallization unit in line with injection molding.

The PlastiCoater in a production cell with molding gives the manufacturer full control of the production flow, reducing lead-time and cost. Better adhesion and fewer defects from metalizing fresh objects without manual interference also significantly improve product yields.

IMPROVED LEAD-TIME, COST AND YIELD

Synchronizing molding and metallization has many advantages over separating the processes. Today, objects are usually stored after molding before being manually loaded and metalized in batch-type PVD systems. Often the metallization is outsourced resulting in multiple handling and transport steps.

The PlastiCoater is loaded with objects robotically directly out of the injection molding machine. A proprietary system design allows metallization under optimal process conditions at a throughput matching the molding system.

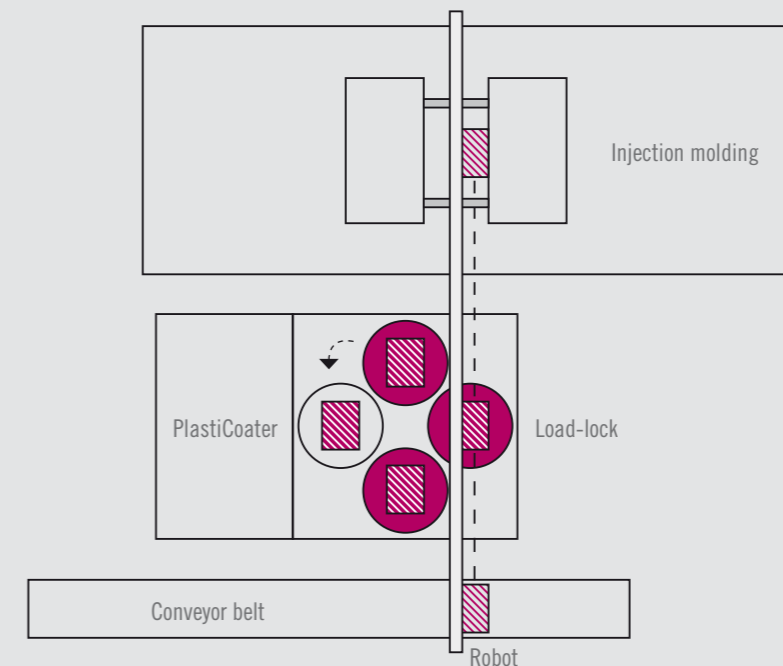
Metallization only seconds after molding, while the object is still warm, even allows use of plastics that normally cannot be metalized with good adhesion due to monomers migrating to the surface.

SYSTEM DESIGN FOR FLEXIBILITY AND AFFORDABILITY

The productivity of the molding machine is matched in the PlastiCoater using a load-lock and two process stations working in parallel. The objects are in a constant vacuum during processing and movement between stations inside the system. Only the load-lock opens to the atmosphere.

The process stations can be equipped for magnetron sputtering as well as plasma activation and plasma passivation. Two different metals can be coated in the two process stations without contamination or oxidation between the metal layers. The two process stations can also be used for coating the same metal to achieve shorter cycle time for thicker metal films.

The system produces a large variety of functional and decorative metal coatings. The design of the PlastiCoater ensures good coating coverage of three-dimensional objects. Typical coating materials include Al, Cr, Cu, stainless steel, Ag and Au.



The PlastiCoater has a small footprint and is easy to set up and operate. It is easily moved between molding systems or between facilities for maximum cost efficiency and flexibility.

Material flow in production cell

The PlastiCoater forms a production cell together with an injection molding system and a robotic handler. The robot moves the molded object directly from the mold to the PlastiCoater, and after metallization from the PlastiCoater to e.g. a conveyor belt.

Four objects, or pallets of objects, are located inside the PlastiCoater simultaneously:

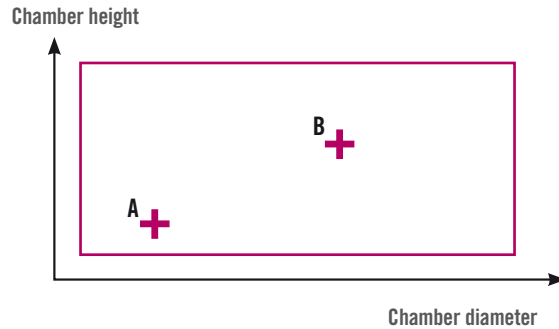
- Load-lock: unloading, loading, and vacuum pump-down,
- Process station 1: plasma activation or metallization,
- Pump station: resting and cooling between processes,
- Process station 2: metallization or plasma passivation

CUSTOMER ADAPTABLE

The size and configuration of the PlastiCoater can be optimized to meet your needs. Impact Coatings works closely with its customers to find optimal solutions for volume production.

The chamber diameter and height in the PlastiCoater can be adapted to customer requirements.

Two configuration examples, A and B, are specified in the table below.



Examples of customized specifications

Configuration example A and B	A	B
Maximum object size	ø198x68 mm	ø398x178 mm
Load lock	Yes	Yes
Deposition chambers	2	2
Deposition process	DC magnetron sputtering Plasma activation, Plasma passivation	DC magnetron sputtering Plasma activation, Plasma passivation
Deposition source orientation	Top, bottom, or both	Top, bottom, or both
Numbers of deposition sources	1 to 4	1 to 4
Cycle time (example, 200 nm Aluminum)	20 sec	40 sec
System dimensions	1200x800x1850 mm	1650x1250x1850 mm
System weight	350 kg	1 500 kg
Installation requirements		
- Electricity	3-phase, 400 V 16 A (1 magnetron) – 63 A (4 magnetrons)	3-phase, 400 V 32 A (1 magnetron) – 80 A (4 magnetrons)
- Cooling water	24°C, 5 l/min	24°C, 15 l/min
- Compressed air	>5 bar	>5 bar

Note: These specifications can be changed without notice.