

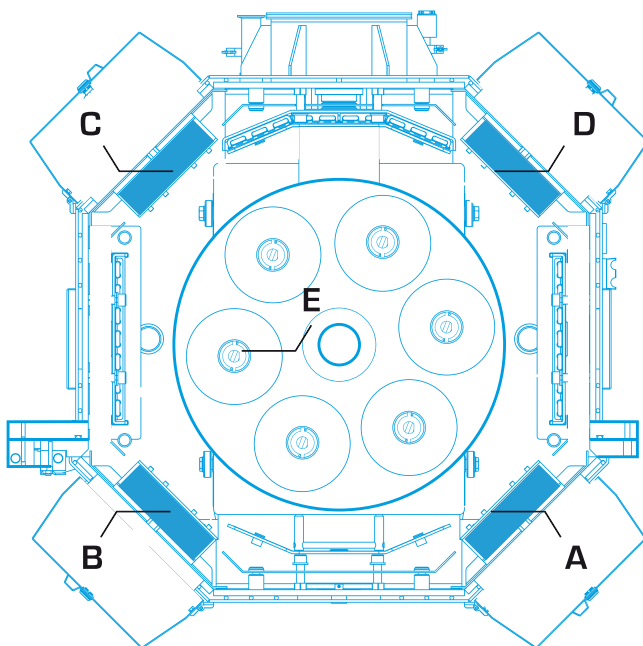
High Volume Unit



PLATIT® 11 - Series

1011 SAT

The PL1011 SAT (Supreme Arc Technology) with revolutionary double-pulsed technology features four planar arc cathodes and eight arc power supplies, setting a new standard in PVD coating. As the next generation of PLATIT's robust coating units, it serves as the backbone of any high-volume coating center.



Technologies applied:

- 4 x Planar ARC cathode with 8 x ARC power supplies in both DC and pulsed modes

- A** Planar Cathode
- B** Planar Cathode
- C** Planar Cathode
- D** Planar Cathode
- E** Carousel

Engineered for customers who prioritize both process reliability and high deposition rates, the PL1011 SAT delivers premium-quality coatings at low costs per tool. Its industrial design maximizes service accessibility, making maintenance efficient and user-friendly.

Double-Pulsed technology

The PL1011 SAT with revolutionary double-pulsed technology sets a new benchmark in PVD coating. Traditional arc evaporation, while enabling high deposition rates through high currents, often leads to rougher coatings. In contrast, the PL1011 SAT achieves a significantly smoother surface with minimal droplet formation.

What sets this technology apart is its ability to generate a highly dense, strongly ionized plasma by combining advanced high-current medium-frequency power sources for pulsed arc with improved cathode technology for superior arc steering. The result is a dense, high-quality coating with reduced roughness, delivering outstanding surface quality.

This advanced double-pulsed technology offers exceptional efficiency, lower energy consumption, and shorter batch times thanks to enhanced evaporation rates. It also ensures a more uniform coating thickness across the entire height and optimizes target utilization.

Highlights

- Dense, ionized plasma using advanced power sources and enhanced cathode technology
- High productivity with 30 % faster coating deposition time
- Superior coating quality with a smoother surface and minimal droplet formation
- Optimized target utilization for increased efficiency and cost-effectiveness



Cathodes
4



Signature Coatings



Cycle
≥ 5.5 h



Max. Load
750 kg



Solution
Turnkey



Service
Worldwide



1011 SAT

Specifications

Etching technologies applied:

- LGD (Lateral Glow Discharge)
- Plasma etching with argon, glow discharge
- Metal ion etching (Ti, Cr)

Load and cycle times:

- Max. coating volume: \varnothing 715 × H 805 [mm]
- Max. coating height with defined coating thickness: 750 mm
- Max. load: 750 kg; higher weight upon request

Batch times PL1011 SAT*:

Shank tools (2 μm):	\varnothing 10 × 70 [mm]	1,008 pcs.	5.5–6.5 h
Inserts (3 μm):	\varnothing 12 × 4 [mm]	11,760 pcs.	7–7.5 h
Hobs (4 μm):	\varnothing 120 × 120 [mm]	72 pcs.	6–6.5 h

* Average cycle times in an ongoing production with max. number of cathodes in use.

Modular carousel systems:

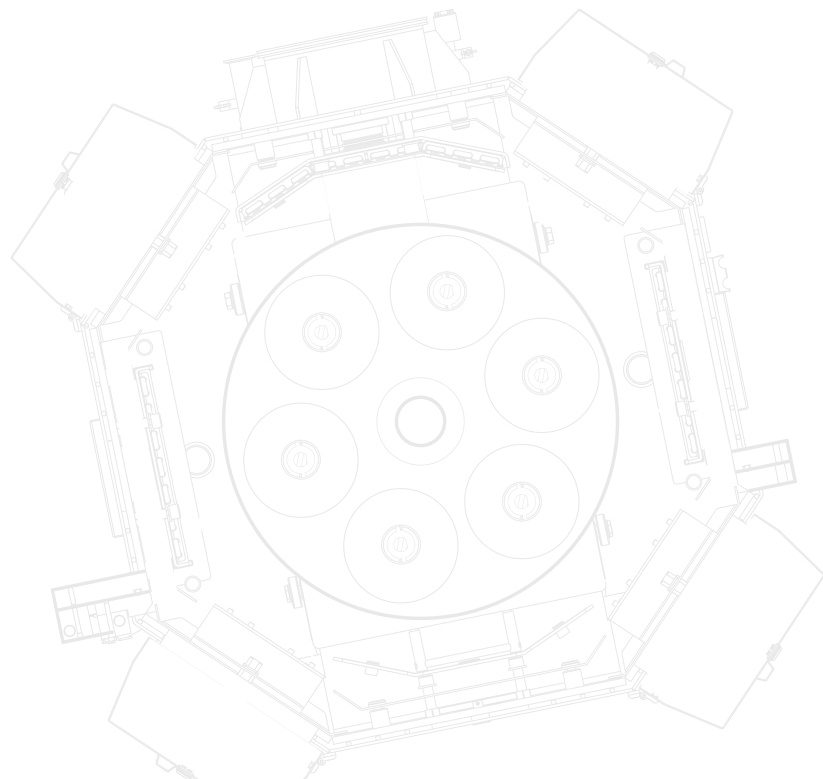
- 1 to 12 axes

Software:

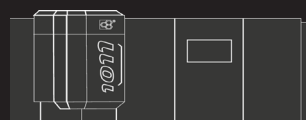
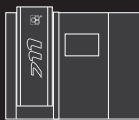
- PLATIT SmartSoftware (PC and PLC system) with touch screen
- Statistics and help function via user interface
- Data recording and real-time display of process parameters and flow
- Manual and automatic process control
- Remote diagnostics and maintenance

Machine dimensions:

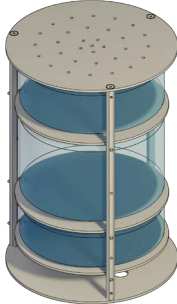
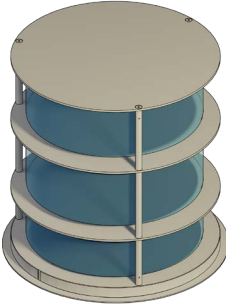
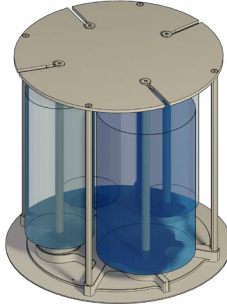
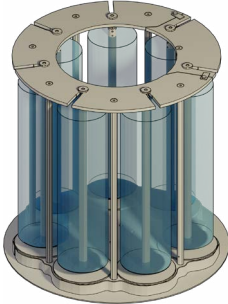

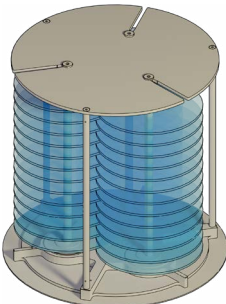
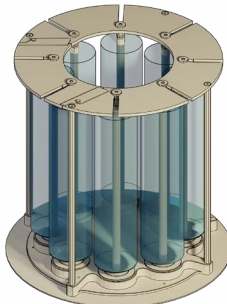
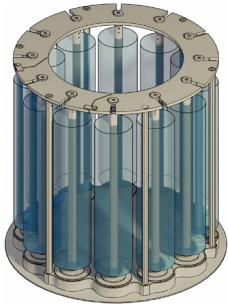
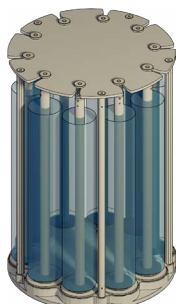
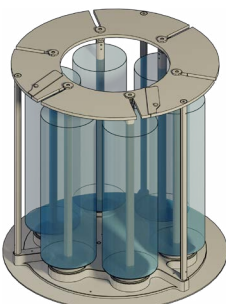
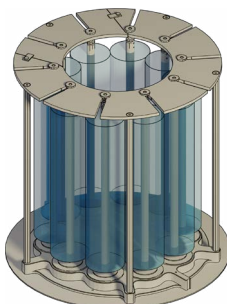
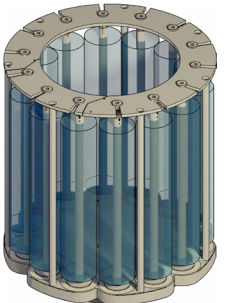
- Footprint: W 4,700 × D 2,250 × H 2,350 [mm]



11-SERIES ACCESSORIES



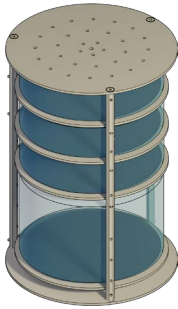
Carousels

	111	411		
Max. coatable height	498 mm	500 mm		
	 <p>Single rotation D ≤ 355 mm</p>	 <p>Single rotation D ≤ 500 mm for saw blades, D ≤ 460 mm for molds & dies</p>	 <p>4 asymmetric axes D3 ≤ 183 mm, D1 ≤ 250 mm</p>	 <p>7 axes for triple rotation for gearboxes D ≤ 143 mm</p>
	 <p>4 axes for continuous triple rotation for gearboxes D ≤ 143 mm</p>	 <p>3 axes for saw blades with overlap D ≤ 285 mm</p>	 <p>4/8 axes D4 ≤ 215 mm / D8 ≤ 115 mm</p>	 <p>6/12 axes D6 ≤ 145 mm / D12 ≤ 100 mm</p>
	 <p>10 axes for continuous double rotation D ≤ 77 mm</p>	 <p>3/6 axes D3 ≤ 220 mm / D6 ≤ 150 mm</p>	 <p>5/10 axes D5 ≤ 175 mm / D10 ≤ 94 mm</p>	 <p>14 axes D ≤ 85 mm</p>

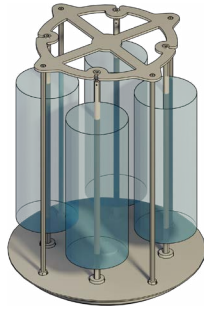
Exemplary illustrations
Special carousels available upon request

1011

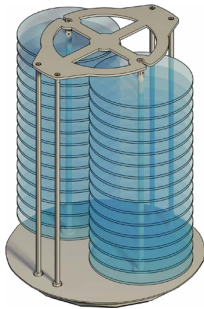
805 mm



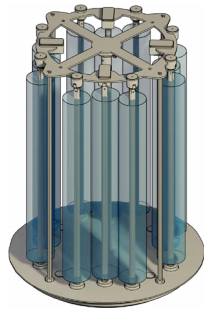
Single rotation
D ≤ 715 mm



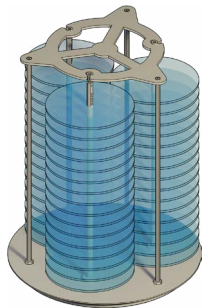
4 axes for kicker
D ≤ 270 mm



2 axes for saw blades with overlap
D ≤ 450 mm



4/8/12 axes for kicker
D ≤ 170 mm

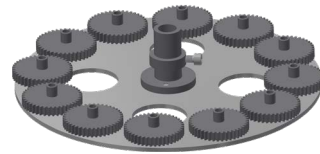


3 axes for saw blades
D ≤ 420 mm with overlap,
D ≤ 250 mm without overlap



10 axes for gearboxes
D ≤ 143 mm

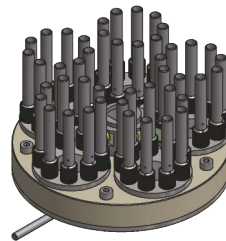
HOLDERS



Disc with gears



Gearbox with triple rotation



Quad gearbox for quad rotation

Loading capacities

Pi111 G3

Tool type	Tool diameter	Tool length	Satellites	Discs/ satellite	Holders/ disc	Tools/ holder	Tools/ disc	Tools/ batch	Holder type
Mirco Tool	3 mm	48 mm	4	4	8	10	80	1,280	H
	6 mm	48 mm	4	4	8	6	48	768	H
Shank Tool	3 mm	50 mm	4	5	8	10	80	1,600	D
	6 mm	50 mm	4	4	5	9	45	720	G
	6 mm	50 mm	4	4	8	4	32	512	D
	6 mm	50 mm	4	4	18	1	18	288	A
	8 mm	60 mm	4	4	18	1	18	288	A
	10 mm	70 mm	4	4	18	1	18	288	A
	20 mm	100 mm	4	3	12	1	12	144	A
Insert	12 mm	4 mm	4	38	18	1	684	2,736	C
Hob	75 mm	120 mm	10	3	1	1	1	30	F
	140 mm	120 mm	4	3	1	1	1	12	F

Pi111 TRM

Tool type	Tool diameter	Tool length	Satellites	Discs/ satellite	Holders/ disc	Tools/ holder	Tools/ disc	Tools/ batch	Holder type
Mirco Tool	3 mm	48 mm	4	4	8	10	80	1,280	H
	6 mm	48 mm	4	4	8	6	48	768	H
Shank Tool	3 mm	50 mm	4	4	8	10	80	1,280	D
	6 mm	50 mm	4	3	5	9	45	540	G
	6 mm	50 mm	4	4	8	4	32	512	D
	6 mm	50 mm	4	4	18	1	18	288	A
	8 mm	60 mm	4	4	18	1	18	288	A
	10 mm	70 mm	4	3	18	1	18	216	A
	20 mm	100 mm	4	3	12	1	12	144	A
Insert	12 mm	4 mm	4	38	18	1	684	2,736	C
Hob	75 mm	120 mm	10	3	1	1	1	30	F
	140 mm	120 mm	4	3	1	1	1	12	F

Pi411 ECO

Tool type	Tool diameter	Tool length	Satellites	Discs / satellite	Holders / disc	Tools / holder	Tools / disc	Tools / batch	Holder type
Micro Tool	3 mm	48 mm	7	4	8	10	80	2,240	H
	6 mm	48 mm	7	4	8	6	48	1,344	H
Shank Tool	3 mm	50 mm	7	4	8	10	80	2,240	D
	6 mm	50 mm	7	4	5	9	45	1,260	G
	6 mm	50 mm	7	4	8	4	32	896	D
	6 mm	50 mm	7	4	18	1	18	504	A
	8 mm	60 mm	7	4	18	1	18	504	A
	10 mm	70 mm	7	4	18	1	18	504	A
	20 mm	100 mm	7	3	12	1	12	252	A
Insert	12 mm	4 mm	7	38	18	1	684	4,788	C
Hob	80 mm	120 mm	14	3	1	1	1	42	F
	140 mm	120 mm	7	3	1	1	1	21	F

PL1011 SAT

Tool type	Tool diameter	Tool length	Satellites	Discs / satellite	Holders / disc	Tools / holder	Tools / disc	Tools / batch	Holder type
Shank Tool	6 mm	50 mm	4	7	15	4	60	1,680	E
	6 mm	50 mm	4	7	42	1	42	1,176	B
	8 mm	60 mm	4	7	42	1	36	1,176	B
	10 mm	70 mm	4	6	42	1	30	1,008	B
	20 mm	100 mm	4	5	23	1	23	460	B
Insert	12 mm	4 mm	4	2 × 35	42	1	1470	11,760	C
Hob	120 mm	120 mm	12	6	1	1	1	72	F
	140 mm	120 mm	10	6	1	1	1	60	F

Holder type:

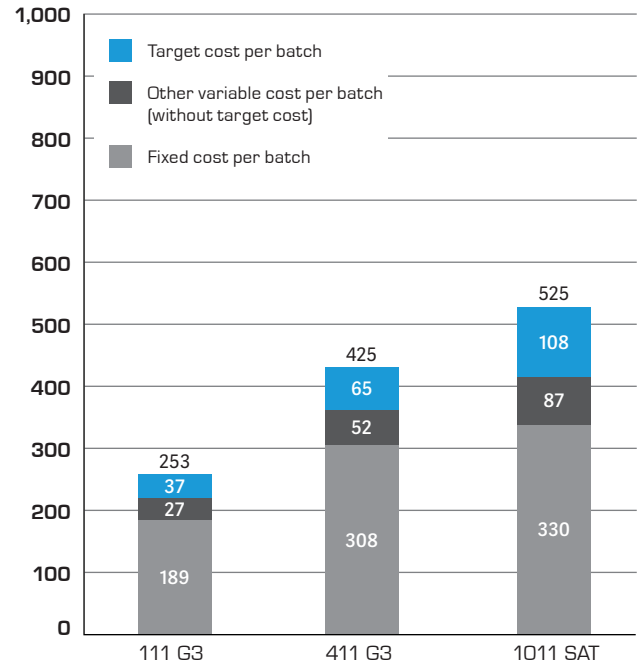
- A Tool in a sleeve, driven by a gearbox
- B Tool in a sleeve, driven by a kicker
- C Insert with a hole, speared on a rod
- D Tool in a revolver, driven by a gearbox
- E Tool in a revolver, driven by a kicker
- F Hob on a satellite / rod
- G Tool in a sleeve, driven by a quad gearbox
- H Tool in a micro tool holder, driven by a gearbox

Process cost comparison

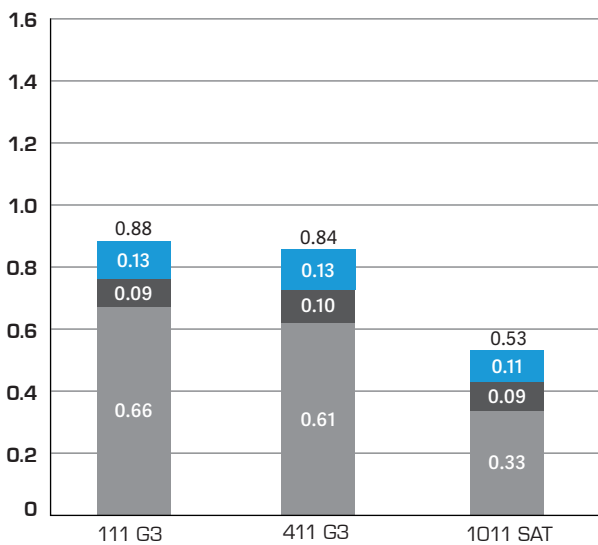
When calculating an investment in a PVD coating turnkey system, there are several variables to be taken into consideration. On this page we give you further insights about how fixed and variable costs add up for different PLATIT coating systems. We are using the case of a German SME coating 10 × 70 mm shank tools with three different coatings – AlTiN, Omnis and TiXCo3.

The diagram on the right visualizes that the majority of the batch costs of a PVD system are determined by the fixed costs. The main cost drivers are depreciation costs for the investment and the personnel costs for the operators. The variable costs, on the other hand, typically amount to less than one sixth of the total operating costs. In particular, the cost of the targets accounts for only 15–20% of the total cost per batch.

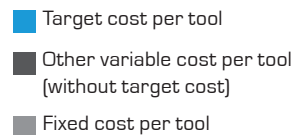
Cost per batch [CHF]:



Cost per tool [CHF]:



The diagram on the left visualizes the breakdown of cost per tool in different PLATIT coating systems. As it is shown in the diagram, the cost per tools decreases significantly in large-sized PVD coating units due to scale effects.



Detailed case description:
 German tool manufacturer, 10 × 70 mm shank tools
 Coatings: AlTiN (40 %), Omnis (40 %), TiXCo3 (20 %), 2µm on tool
 Costs included:
 Fixed costs: Investment in PVD system incl. production accessories, depreciation (8 years), operator wages (240 working days per year: 5am to 11pm), rental costs for space, unit maintenance
 Loading: Pi111 = 288 pc; Pi411 = 504 pc; PL1011 = 1008 pc.

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COMPENDIUM



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