

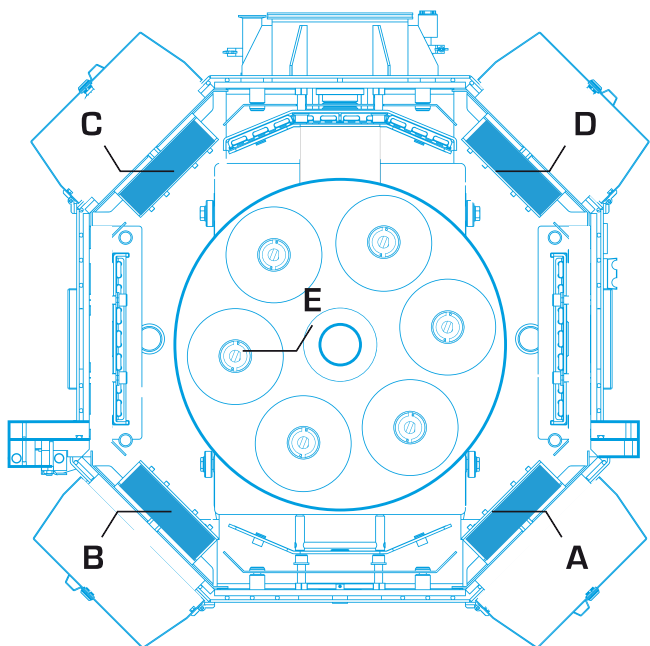
High Volume Unit



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\*:

<b>Shank tools (2 <math>\mu</math>m):</b>	$\varnothing$ 8 × 70 [mm]	1,008 pcs.	5.5–6.5 h
<b>Inserts (3 <math>\mu</math>m):</b>	$\varnothing$ 12 × 4 [mm]	11,760 pcs.	7–7.5 h
<b>Hobs (4 <math>\mu</math>m):</b>	$\varnothing$ 80 × 180 [mm]	36 pcs.	6–6.5 h
<b>Hobs (4 <math>\mu</math>m):</b>	$\varnothing$ 80 × 100 [mm]	72 pcs.	6–6.5 h

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

### Modular carousel systems:

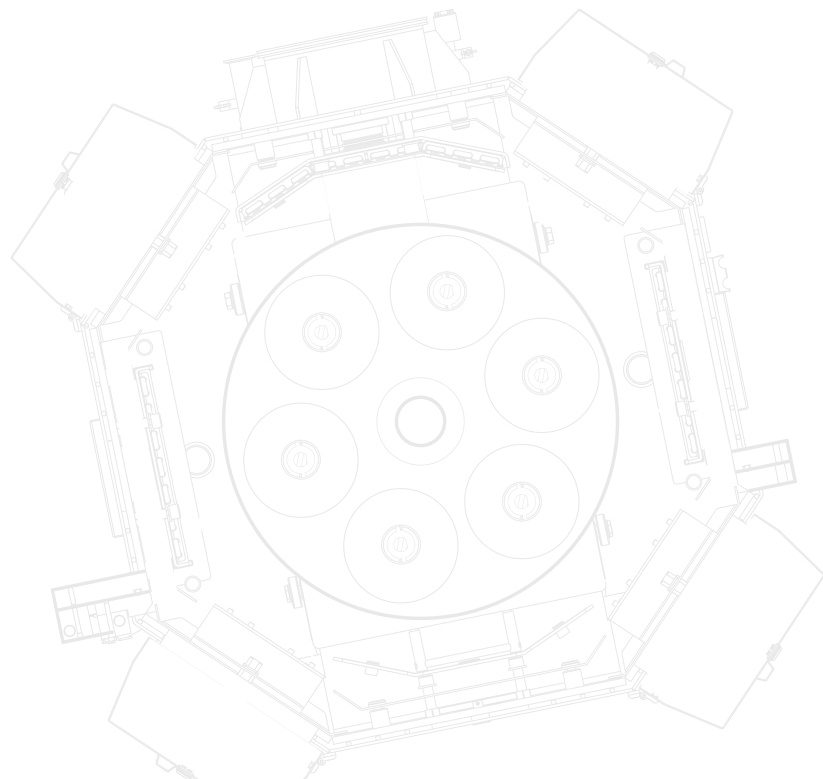
- 1 to 12 axes

### Software:

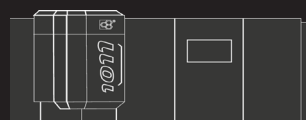
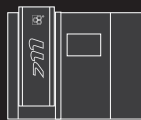
- PLATIT SmartSoftware (PC and PLC system) with touch screen
- Statistics and help function via user interface
- Data recording and real-time display of process parameters and flow
- Manual and automatic process control
- Remote diagnostics and maintenance

### Machine dimensions:

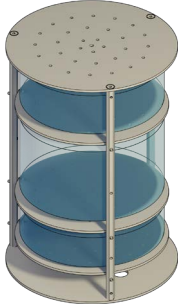
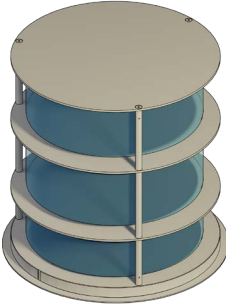
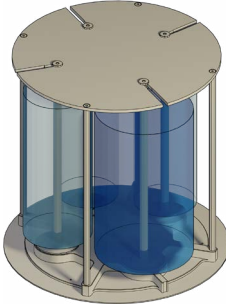
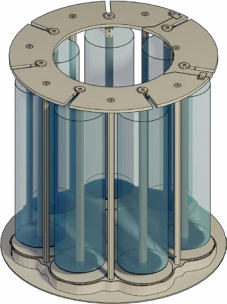

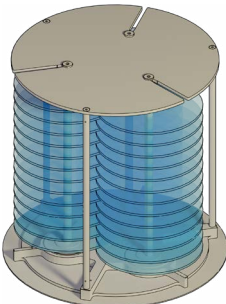
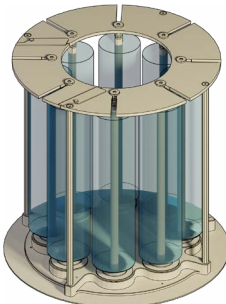
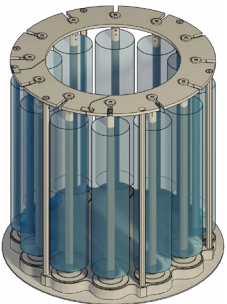
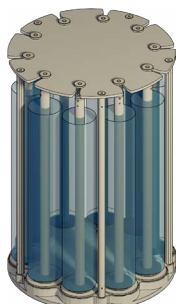
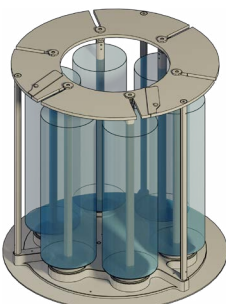
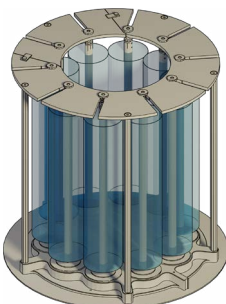
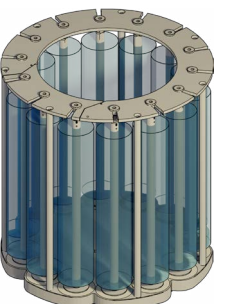
- Footprint: W 4,700 × D 2,250 × H 2,350 [mm]



# 11-SERIES ACCESSORIES



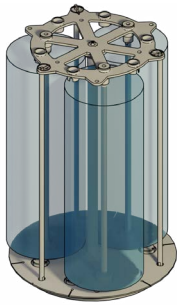
# Carousels

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

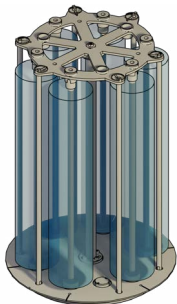
Exemplary illustrations  
Special carousels available upon request

## 711

805 mm



**3 axes for kicker**  
 $D \leq 270$  mm



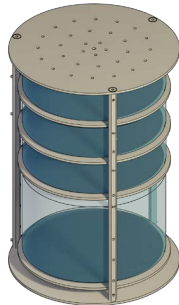
**6 axes for kicker or gearboxes**  
 $D \leq 150$  mm



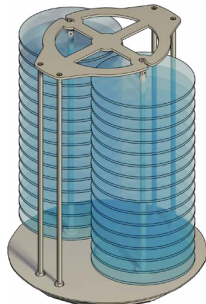
**9 axes**  
 $D \leq 95$  mm

## 1011

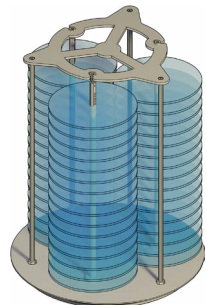
805 mm



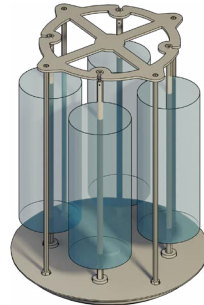
**Single rotation**  
 $D \leq 715$  mm



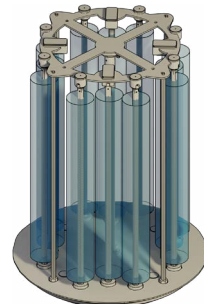
**2 axes for saw blades with overlap**  
 $D \leq 450$  mm



**3 axes for saw blades**  
 $D \leq 420$  mm with overlap,  
 $D \leq 250$  mm without overlap



**4 axes for kicker**  
 $D \leq 270$  mm



**4/8/12 axes for kicker**  
 $D \leq 170$  mm



**10 axes for gearboxes**  
 $D \leq 143$  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
Shank Tool	3 mm	50 mm	4	4	8	10	80	1,280	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	80 mm	100 mm	4	4	1	1	1	16	F
	75 mm	100 mm	10	4	1	1	1	40	F

## Pi411 ECO

Tool type	Tool diameter	Tool length	Satellites	Discs / satellite	Holders / disc	Tools / holder	Tools / disc	Tools / batch	Holder type
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	100 mm	7	4	1	1	1	28	F
	80 mm	100 mm	14	4	1	1	1	56	F

## PL711

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	6	5	5	9	45	1,350	G
	6 mm	50 mm	6	6	8	4	32	960	D
	6 mm	50 mm	6	6	18	1	18	540	A
	8 mm	60 mm	6	5	18	1	18	540	A
	10 mm	70 mm	6	5	18	1	18	432	A
	20 mm	100 mm	6	4	12	1	12	216	A
Insert	12 mm	4 mm	6	38	18	1	684	4,104	C
Molds & dies	160 mm	130 mm	3	4	1	1	1	12	F
Sliding parts with DLC2	25 × 10 mm	130 mm	3	4	4	1	1	48	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	140 mm	100 mm	10	6	1	1	1	60	F
	80 mm	100 mm	12	6	1	1	1	72	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

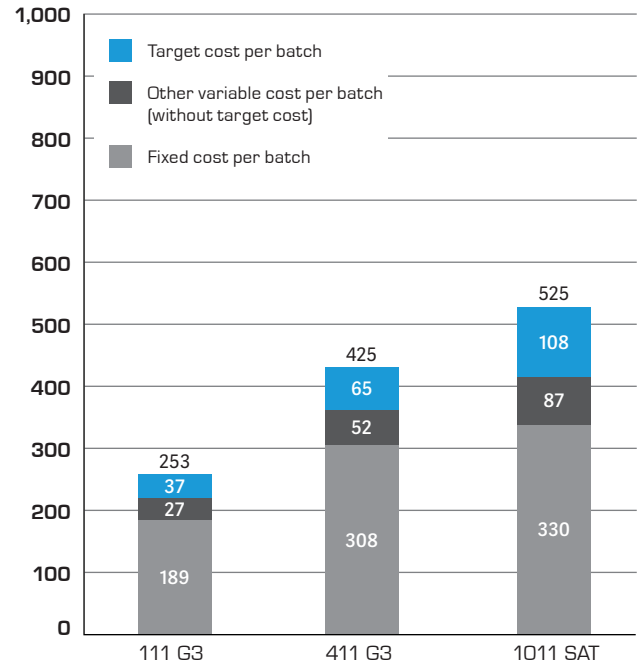
G Tool in a sleeve, driven by a quad gearbox

# Process cost comparison

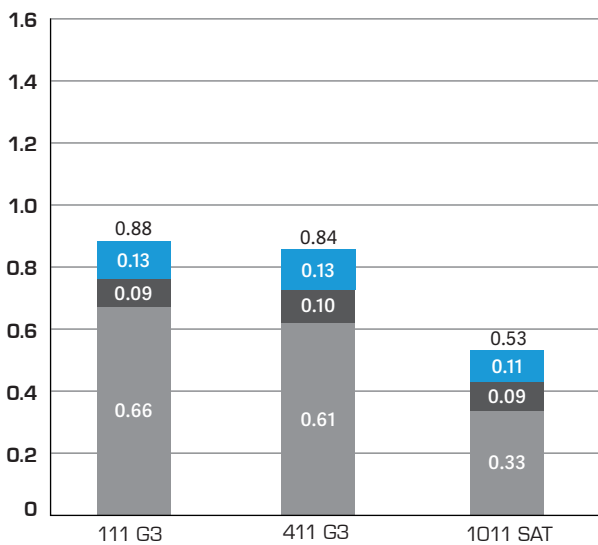
When calculating an investment in a PVD coating turnkey system, there are several variables to be taken into consideration. On this page we give you further insights about how fixed and variable costs add up for different PLATIT coating systems. We are using the case of a German SME coating 10 × 70 mm 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 account for only 15–20% of the total cost per batch.

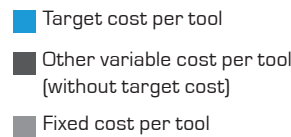
Cost per batch [CHF]:



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 decrease 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.

**PLATIT AG**

Headquarters  
Eichholzstrasse 9  
CH-2545 Selzach  
info@platit.com  
+41 32 544 62 00

**PLATIT AG**

Custom Coating Solutions (CCS)  
Champ-Paccot 21  
CH-1627 Vaulruz  
info@platit.com  
+41 32 544 62 00

**PLATIT a.s.**

Production, R&D, Service, CEC  
Průmyslová 3020/3  
CZ-78701 Šumperk  
info@platit.com  
+420 583 241 588

**PLATIT (Shanghai) Co., Ltd.**

Sales, R&D, Service, CEC  
No. 161 Rijing Road (Shanghai) PFTZ  
CN-200131 Pudong Shanghai  
china@platit.com  
+86 2158 6739 76

**PLATIT Inc.**

Sales, Service, CEC  
1312 Armour Blvd.,  
Mundelein IL 60060, US  
usa@platit.com  
+1 847 680 5270

COMPENDIUM



Advanced Coating Systems  
SWISS  QUALITY