



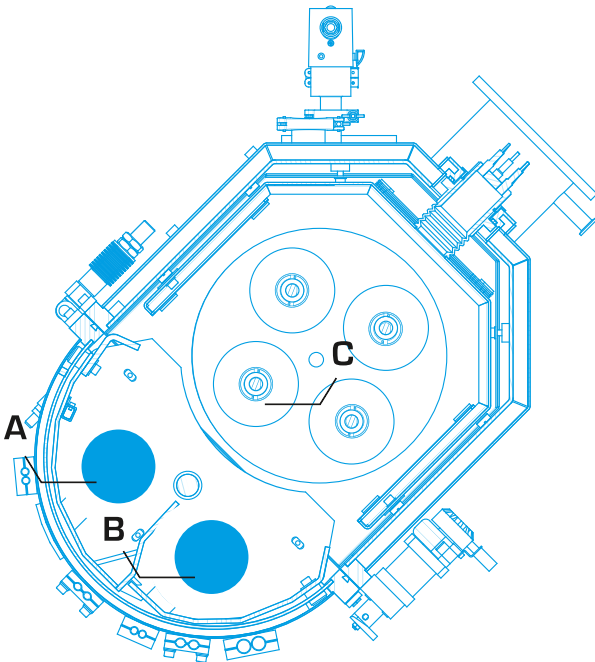
Smart Speed Unit

PLATIT® 11 - Series

PLATIT®

111 Smart Speed Unit

- A** LARC® PLUS Cathode
- B** LARC® PLUS Cathode
- C** Carousel



The Pi111 PLUS G3 represents the third generation of a compact PVD coating unit from PLATIT. Its key features are fast cycle times, easy operation and user-friendliness at a favorable price – without compromising coating performance. Having two rotating cathodes utilizing ARC technology, the unit deposits selected PLATIT Signature Coatings at a consistently high level of quality. It is the ideal choice for customers looking to enter the coating world or wanting to add a fast lowvolume PVD system to their fleet of machines.



Technologies applied:

- 2 × LARC® PLUS (Lateral Rotating PLUS Cathode) for ARC deposition

Advantages of LARC® PLUS compared to LARC®:

- Improved target utilization (up to 30%)
- Enhanced magnetic-field system, thus increased deposition rate
- Quick cathode exchange



Targets
2



Signature Coatings



Cycle
≥ 4.5 h



Max. Load
160 kg



Solution
Turnkey



Service
Worldwide



111 Smart Speed Unit

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: 353 × H 498 [mm]
- Max. coating height with defined coating thickness: 414 mm
- Max. load: 160 kg

4–5 batches / day for*:

Shank tools (2 µm):	∅ 10 × 70 [mm]	288 pcs.	3–5 h
Inserts (3 µm):	∅ / □ 20 / 14 × 6 [mm]	1680 pcs.	5.5 h
Hobs (4 µm):	∅ 80 × 180 [mm]	8 pcs.	7 h
Hobs (4 µm):	∅ 75 × 180 [mm]	20 pcs.	7 h

* Average cycle times for a typical coating mix in a production environment.

Modular carousel systems:

- Dual-rotation kicker carousel or triple-rotation gearbox system

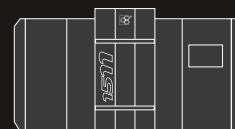
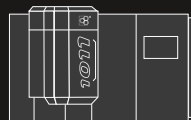
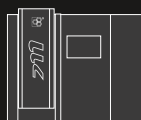
Software:

- Simple use and maintenance
- PLATIT SmartSoftware (PC and PLC system)
- Modern control system with touch screen
- Data recording and real-time display of process parameters and flow
- Manual and automatic process control
- Remote diagnostics and maintenance




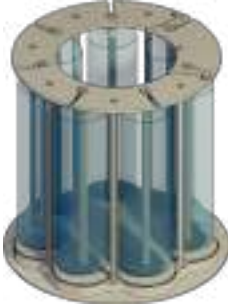






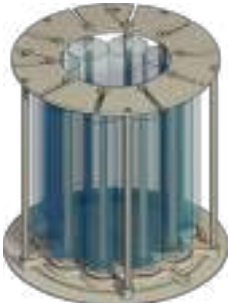

Machine dimensions:

- Footprint: W 2000 × D 1550 × H 2250 [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

711

800 mm



Double rotation
D ≤ 540 mm



3 axes for kicker
D ≤ 160 mm



6 axes for kicker or gearboxes
D ≤ 143 mm

1011 / 1511

805 mm



Single rotation
D ≤ 700 mm



2 axes for saw blades with overlap
D ≤ 450 mm



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



4 axes for kicker
D ≤ 270 mm



4/8/12 axes for kicker
D ≤ 170 mm



10 axes for gearboxes
D ≤ 143 mm

HOLDERS



Disc with gears



Gearbox with triple rotation



Quad gearbox for quad rotation

Loading capacities

Pi111

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	1	5	28	4	112	560	E
	6 mm	50 mm	1	5	52	1	52	260	B
	8 mm	60 mm	1	4	52	1	52	208	B
	10 mm	70 mm	1	4	52	1	52	208	B
	20 mm	100 mm	1	3	28	1	28	84	B
Insert	20 mm	6 mm	1	1	28	40	1120	1120	C
Hob	68 mm	120 mm	1	1	12	3	36	36	F
	80 mm	120 mm	1	1	6	3	18	18	F
	80 mm	180 mm	1	1	6	2	12	12	F

Pi411

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	7	4	5	9	45	1260	G
	6 mm	50 mm	7	5	8	4	32	1120	D
	6 mm	50 mm	7	5	18	1	18	630	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	20 mm	6 mm	7	1	15	28	420	2940	C
Hob	80 mm	120 mm	14	3	1	1	1	42	F
	80 mm	180 mm	14	2	1	1	1	28	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	6	8	4	32	1152	D
	6 mm	50 mm	6	6	18	1	18	648	A
	8 mm	60 mm	6	6	18	1	18	648	A
	10 mm	70 mm	6	5	18	1	18	540	A
	20 mm	100 mm	6	4	12	1	12	288	A
Insert	20 mm	6 mm	6	1	15	22	330	1980	C
Molds & dies	160 mm	140 mm	3	4	1	1	1	12	F
Sliding parts with DLC2	25 × 10 mm	150 mm	3	6	4	1	1	72	F

PL1011

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	8	23	4	92	2944	E
	6 mm	50 mm	4	8	42	1	18	1344	B
	8 mm	60 mm	4	7	42	1	42	1176	B
	10 mm	70 mm	4	6	42	1	42	1008	B
	20 mm	100 mm	4	4	36	1	36	576	B
Insert	20 mm	6 mm	4	2	36	30	1080	8640	C
Hob	80 mm	120 mm	12	6	1	1	1	72	F
	80 mm	180 mm	12	4	1	1	1	48	F

Pi1511

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	10	7	5	9	45	3150	G
	6 mm	50 mm	10	8	8	4	32	2560	D
	6 mm	50 mm	10	8	18	1	18	1440	A
	8 mm	60 mm	10	7	18	1	18	1260	A
	10 mm	70 mm	10	6	18	1	18	1080	A
	20 mm	100 mm	10	5	12	1	12	600	A
Insert	20 mm	6 mm	10	2	12	30	360	7200	C
Hob	80 mm	120 mm	12	6	1	1	1	72	F
	80 mm	180 mm	12	4	1	1	1	48	F

Holder type:

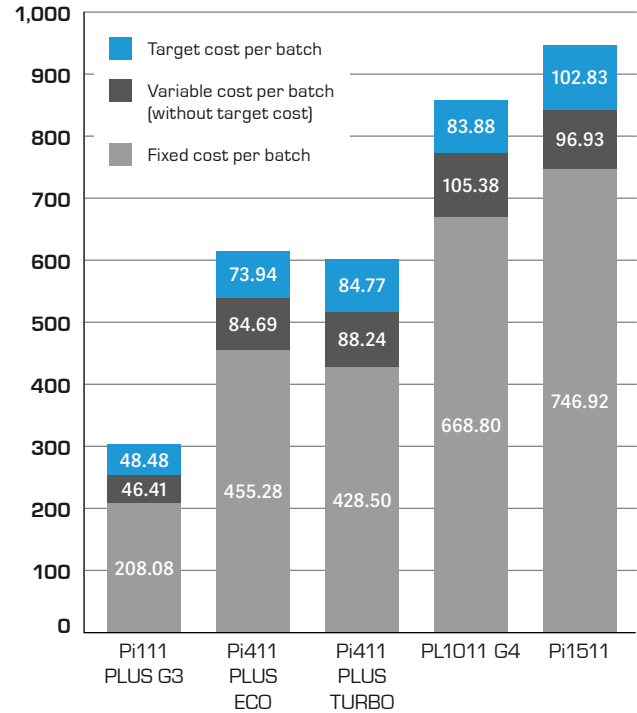
- A Tool in a sleeve, driven by a gearbox
- B Tool in a sleeve, driven by a kicker
- C Insert with a hole, speared on a rod
- D Tool in a revolver, driven by a gearbox
- E Tool in a revolver, driven by a kicker
- F Hob on a satellite / rod
- G Tool in a sleeve, driven by a quad gearbox

Process cost comparison

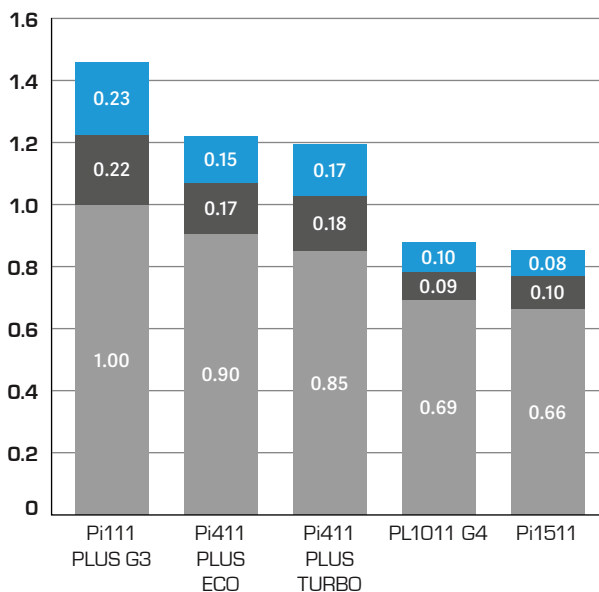
When calculating an investment in a PVD coating system, there are several variables to be taken into consideration. On this page we give you further insights about how fixed and variable costs add up for different PLATIT coating systems. We are using the case of a German SME coating 10 × 70 mm shank tools with three different coatings – AlTiN, AlCrN 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 personnel, depreciation, and rental costs. The variable costs, on the other hand, typically amount to less than a quarter of the total operating costs. In particular, the cost of the targets account for only 10–15% of the total cost per batch.

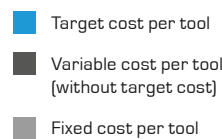
Cost per batch [CHF]:



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 SME
 10 × 70 mm shank tools, AlTiN, AlCrN and TiXCo3 PVD coating
 Costs included:
 Investment costs for turnkey system including chiller, cleaning system and quality control devices, depreciated over 8 years
 Salaries, rental costs, energy (incl. gas, targets, water, and cleaning solution)



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