Standard coating units

PLATIT Coating Intelligence

Portfolio

PLATIT® π - Series

Standard coating units

PLATIT offers high-tech PVD and PECVD coating units. Depending on the requirements, we equip them with the following technologies:

- ARC in DC or pulsed mode
- SPUTTER in DC, pulsed or HiPIMS mode
- Hybrid technology with simultaneous ARC and SPUTTER processes

The focus of PLATIT is on the tool and machine component field, but we also manufacture tailor-made Custom Coating Solutions for special requirements.

PVD standard coating units
PVD standard coating units from PLATIT are perfectly suited for coating tools and machine components of standard market sizes. They allow for short cycle times with high-quality coatings and can be flexibly programmed with different coating structures. Standard coating units can deposit PVD and PECVD for various nitride, oxide and DLC coatings.

PLATIT® 11 - Series	Pi111	Pi411	PL711	PL1011	Pi1511
Max. coating volume [mm]	ø 353 x H 498	ø 540 x H 500	4 x ø 225 x H 800	ø 715 x H 805	ø 715 x H 805
Max. load [kg]	160	200	250	400	400
Load and cycle times of shank tools (2 µm): ø 10 x 70 [mm]	288 pcs., 4.5 h	504 pcs., 4.5 h	540 pcs., 11 h, with CrN	1008 pcs., 7 h	1080 pcs., 7 h
ARC technology	2 x LARC® PLUS cathode	3 x LARC® cathode, upgradable with 1 x CERC® cathode	-	4 x Planar cathode	3 x LARC® XL cathode, 2 x Planar cathode
SPUTTER technology	-	Upgradable with 1 x central SCIL® cathode	2 x Planar cathode	-	-
Hybrid-LACS® technology with simultaneous ARC & SPUTTER processes	-	Yes, upgradable	-	-	-
DLC	-	Upgradable for ta-C sputtered (DLC3) and for PECVD (DLC2)	PECVD (DLC2) and ta-C sputtered (DLC3)	-	-
OXI	-	Upgradable for oxide coatings	-	-	-

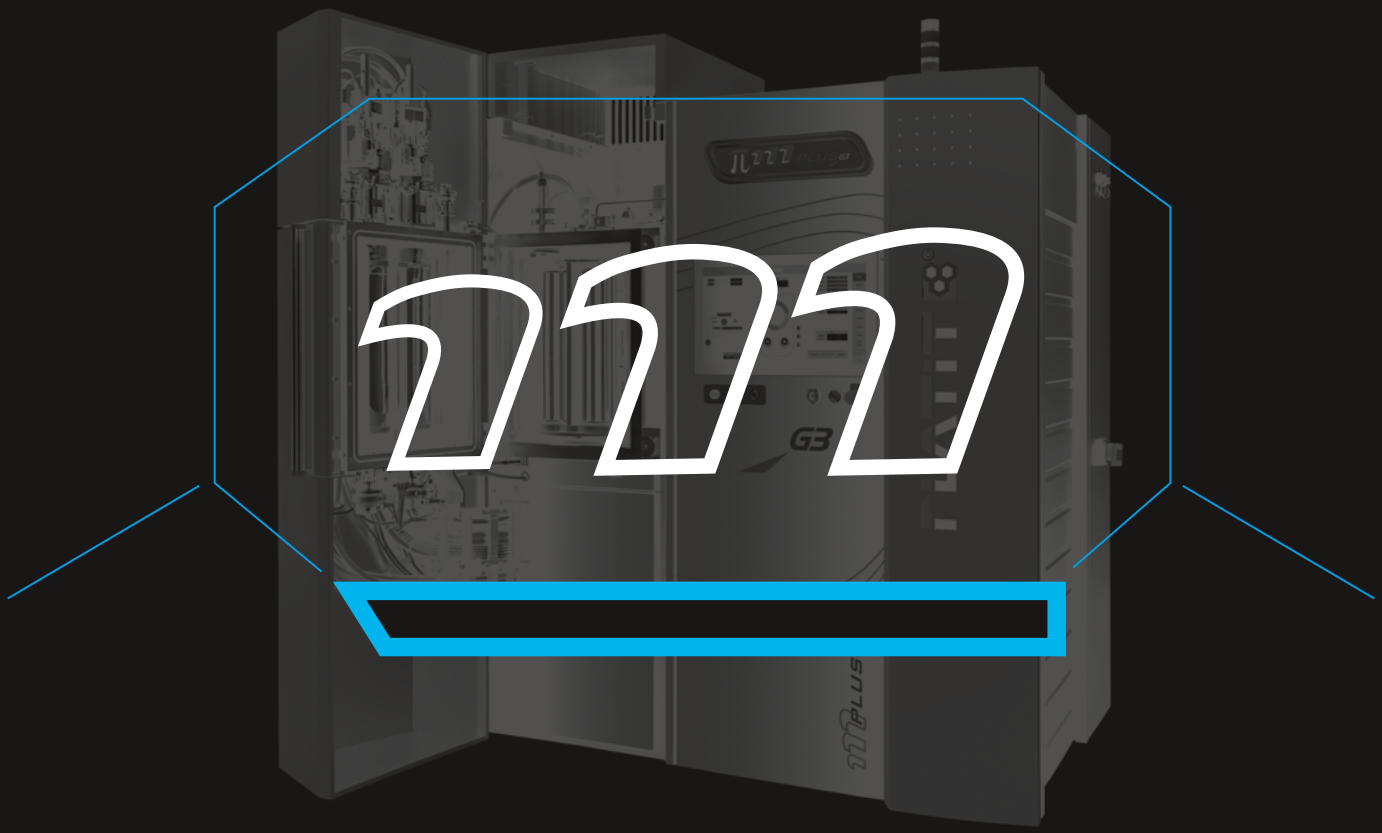
11-Series

COMPENDIUM 62

STANDARD COATING UNITS

Smart Speed Unit

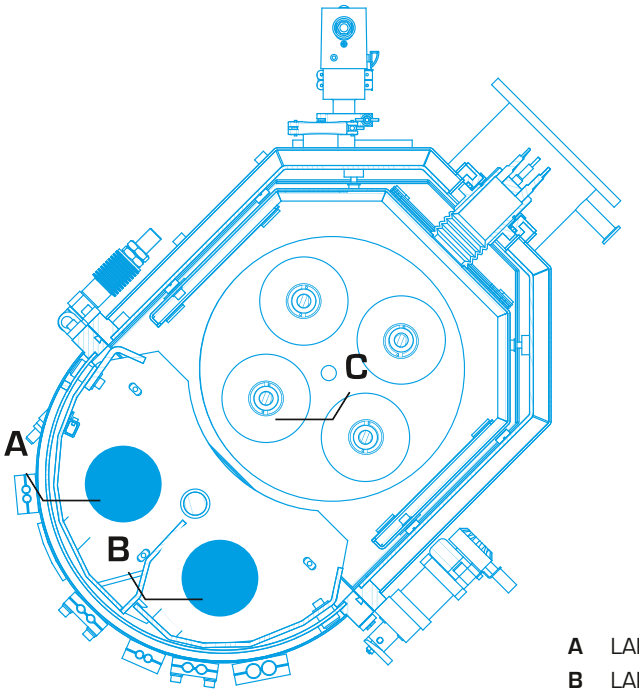
PLATIT Coating Intelligence



PLATIT® 𝟙𝟙 - Series

111 Smart Speed Unit

ARC TECHNOLOGY – 2 ROTATING CATHODES



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

Smart Easy Fast

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 low-volume PVD system to their fleet of machines.

Overview

Technologies applied:

2 x 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	Signature	Cycle	Max. Load	Solution	Service
2	Coatings	≥ 4.5 h	160 kg	Turnkey	Worldwide

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: ø 353 x 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):	ø 10 x 70 [mm]	288 pcs.	4.5 h
Inserts (3 µm):	ø/□ 20/14 x 6 [mm]	1680 pcs.	5.5 h
Hobs (4 µm):	ø 80 x 180 [mm]	8 pcs.	7 h
Hobs (4 µm):	ø 75 x 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 x D 1550 x H 2250 [mm]

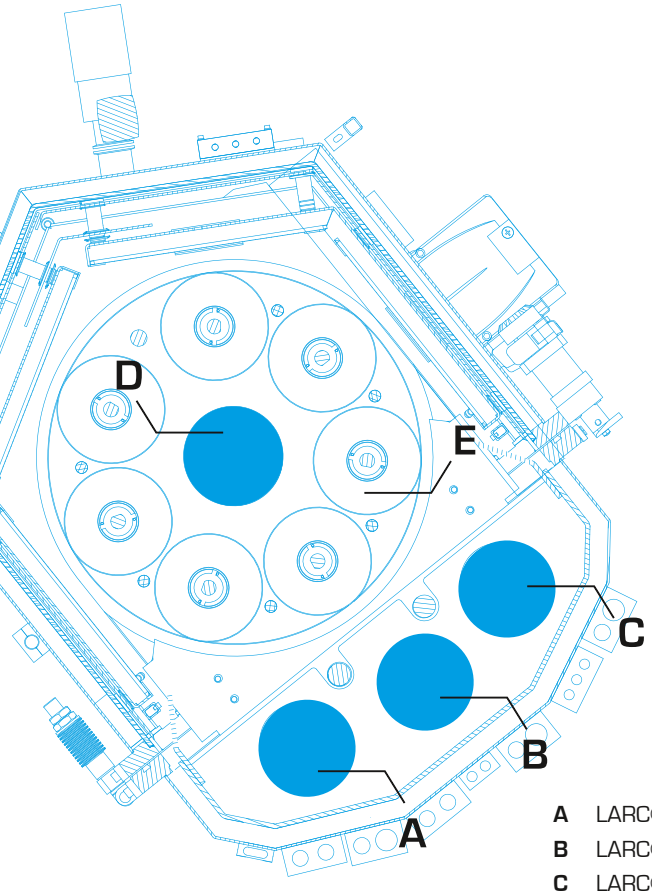
Ultra Flexible Unit

PLATIT Coating Intelligence

PLATIT® 11-Series

411 Ultra Flexible Unit

The concept of the rotating central cathode



411 ULTRA_ Flexible

The broad variety of configuration options as well as the flexibility made possible by the rotating cathodes allows for the development of customer-specific top-performance coatings. Thus, this coating unit addresses the needs of customers who are seeking maximum flexibility with a full range of coating technologies easily accessible in one machine.

A LARC® Cathode
B LARC® Cathode
C LARC® Cathode
D CERC®/ SCIL® Cathode
E Carousel

Due to its modular design and the range of available technologies, the Pi411 PLUS is the world's most flexible coating unit. Its basic configuration as an ARC unit with three rotating cathodes inside the door can be modularly upgraded on-site with an ARC or SPUTTER central cathode as well as with PECVD and OXI processes. Unique to this unit is also the availability of LACS® hybrid technology, which allows for the simultaneous deposition of coatings using both ARC and SPUTTER technology.

Configurations

Technologies applied:

ECO: Basic configuration with 3 x LARC® (LAteral Rotating Cathode) inside the door for ARC deposition
PECVD (DLC2): For a-C:H:Si coatings
TURBO: ECO + CERC® (Central Rotating Cathode) with ARC technology to increase productivity and allow for highly complex coatings
OXI: For oxide coatings in a corundum structure

SCIL® (SPUTTERED Coating Induced by Lateral Glow Discharge): High-performance SPUTTERING from the central cathode, e.g. for ta-C coatings
Hybrid LACS®: Simultaneous ARC and SPUTTER processes with LARC® inside the door and a central SCIL® cathode

PLATIT®

Targets	Hybrid	Signature	Cycle	Max. Load	Solution	Service
3 - 4	LACS®	Coatings	≥ 4.5 h	200 kg	Turnkey	Worldwide

COMPENDIUM 62

411

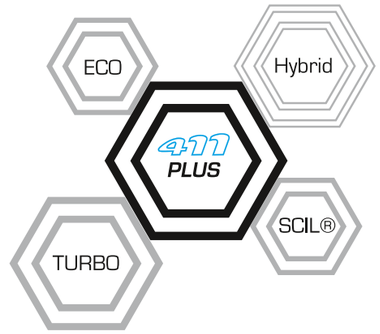
ECO

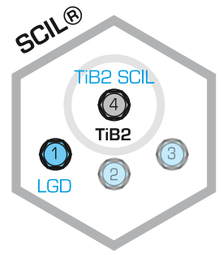
TURBO

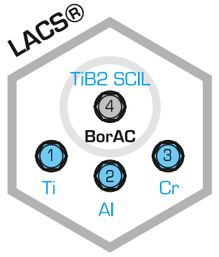
SCIL®

HYBRID

Modular HiEnd Hybrid







ULTRA Flexible

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: ø 540 x H 500 [mm]
- Max. coating height with defined coating thickness: 414 mm
- Max. load: 200 kg

Up to 5 batches/day for*:			
Shank tools (2 µm):	ø 10 x 70 [mm]	504 pcs.	4.5 h
Inserts (3 µm):	ø/□ 20/14 x 6 [mm]	2940 pcs.	5.5 h
Hobs (4 µm):	ø 80 x 180 [mm]	28 pcs.	7 h

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

Modular carousel systems:
- 1 to 14 axes

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 2950 x D 1900 x H 2400 [mm]

HiPIMS 3D Unit

PLATIT Coating Intelligence

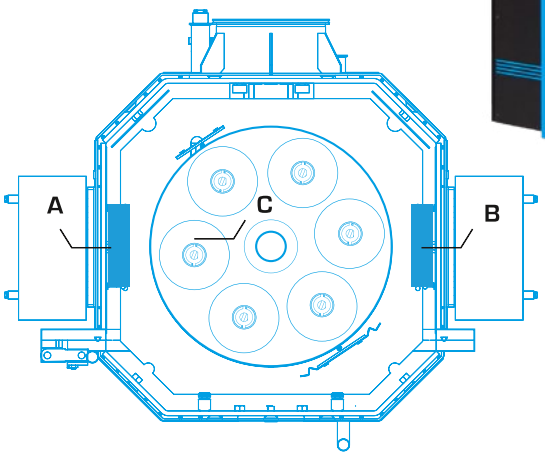
PLATIT® π - Series

711 HiPIMS 3D Unit

COMPENDIUM 62

Overview

A Planar SPUTTER Cathode
B Planar SPUTTER Cathode
C Carousel



Low TP | DLC | HiPIMS

The PL711 is a compact SPUTTER coating unit based on HiPIMS technology (High Power Impulse Magnetron SPUTTERING). It's equipped with two Planar HiPIMS cathodes and allows for the deposition of selected nitride as well as carbon-based coatings (DLC1, DLC2, DLC3) using highly productive processes. Efficient plasma utilization is achieved through an additional booster, the PLATIT 3D module.

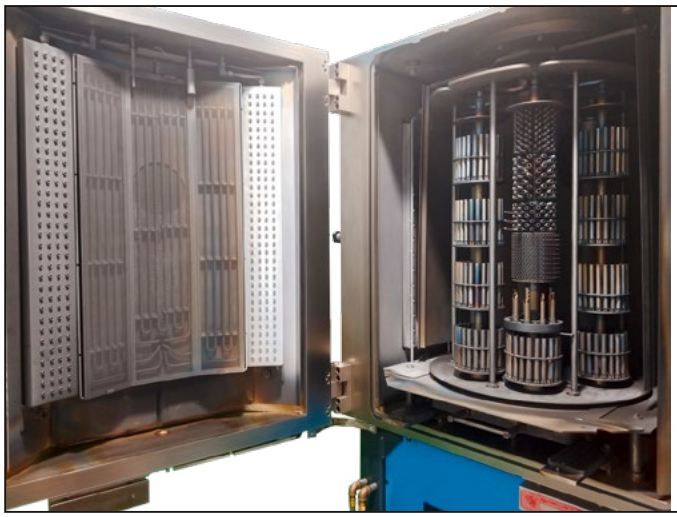
Enhanced plasma focus

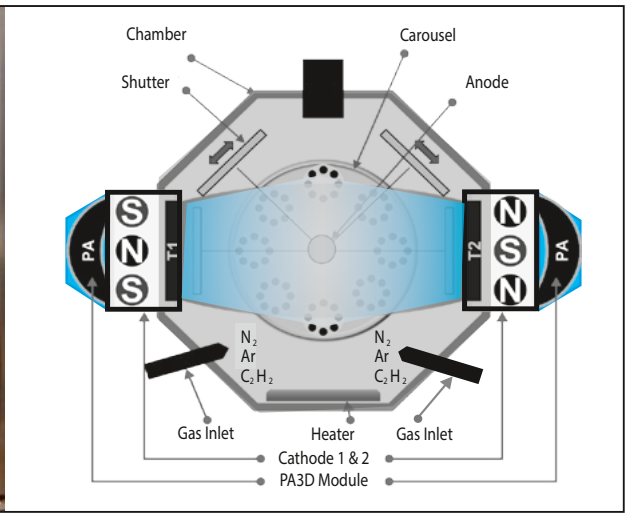
PA3D *Module*

Technologies applied:

- 2 x Planar SPUTTER cathode with HiPIMS technology
- The PA3D module (newly developed Helmholtz system) with a central anode focuses a dense, three-dimensional plasma with a high ionization degree in the carousel, generating homogeneous coatings and reaching a high deposition rate. Coatings from the PL711 provide outstandingly smooth surfaces with a high density, hardness and excellent adhesion.

PLATIT®





Targets	Sputter	Signature	Cycle	Max. Load	Solution	Service
2	HiPiMS	Coatings	≥ 6 h	250 kg	Turnkey	Worldwide

Specifications

Etching technologies applied:
- LGD® (Lateral Glow Discharge)
- Plasma etching with argon, glow discharge
- Metal ion etching (Ti, Cr)

Deposition types:
SPUTTER nitride coatings
- Reactive and non-reactive processes
- Targets: Ti, Zr, Cr
- Coating temperature at 400°C or < 200°C in the low-temperature version

SPUTTER Cr and a-C:H:Si
- DLC2 (PECVD)
- Targets: Cr
- Coating temperature [°C]: 180 - 220

SPUTTER Cr and ta-C + a-C
- DLC3
- Targets: C, Cr
- Coating temperature [°C]: 180 - 250

Load and cycle times:
- Max. coating volume: 4 x ø 225 x H 800 [mm]
- Max. coating height with defined coating thickness: 550 mm
- Max. load: 250 kg

2 batches/day for*:				
Shank tools (2 µm):	ø 10 x 55 [mm]	CrN	540 pcs.	11 h
Molds and dies (3 µm):	up to ø 225 x 140 [mm]	CrN	16 pcs.	10 h
Sliding parts (3 µm):	25 x 150 x 10 [mm]	DLC2	96 pcs.	8 - 9 h

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

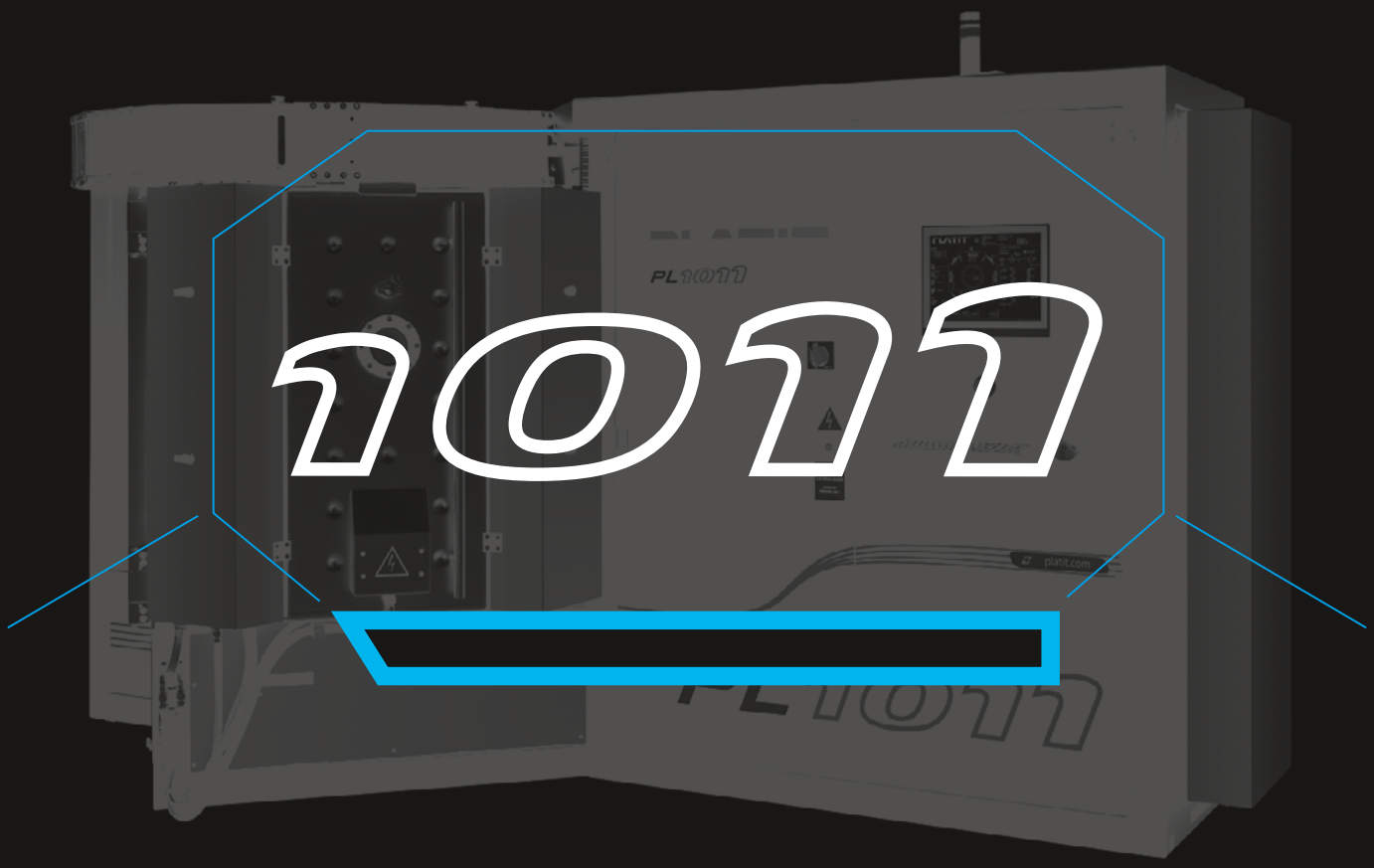
Modular carousel systems:
- 1 or 3 or 6 axes

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 3450 x D 2250 x H 2350 [mm]

High Volume Unit

PLATIT Coating Intelligence



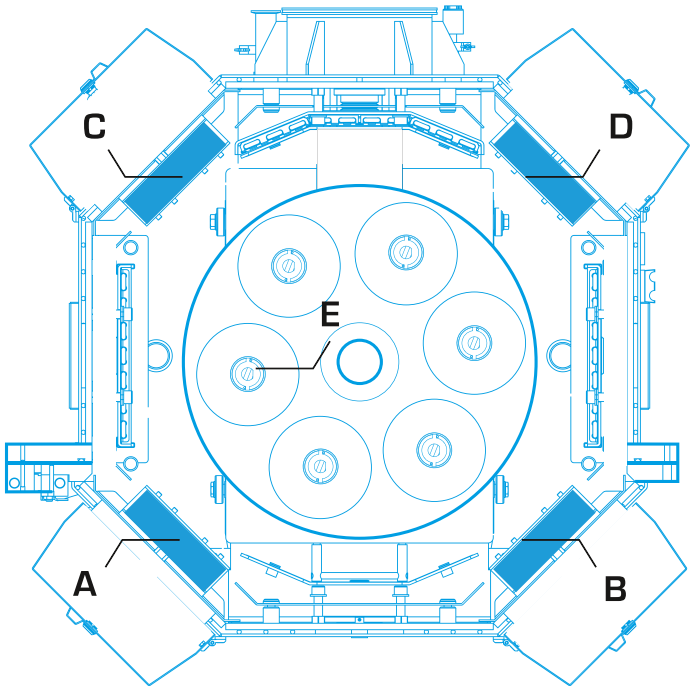
PLATIT® 11 - Series

1011 High Volume Unit

COMPENDIUM 62

Maximum productivity

The PL1011 is designed for customers who seek a mix of process reliability and high-quality coatings at a low cost per tool.



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

Easy Big Power

The PL1011 is the backbone of every high-volume coating center. It has four Planar cathodes utilizing ARC technology and allows for the deposition of all PLATIT standard coatings at a consistently high level of quality and productivity. This coating unit combines maximum production availability with a user-friendly interface and maintenance concept.

Overview

Technologies applied:

- 4 x Planar cathode using ARC technology for depositing

Targets	Signature	Cycle	Max. Load	Solution	Service
4	Coatings	≥ 7 h	400 kg	Turnkey	Worldwide

1011

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: ø 715 x H 805 [mm]
- Max. coating height with defined coating thickness: 711 mm
- Max. load: 400 kg

3 batches/day for *:			
Shank tools (2 µm):	ø 10 x 70 [mm]	1008 pcs.	7 h
Inserts (3 µm):	ø/□ 20/14 x 6 [mm]	8640 pcs.	7.5 h
Hobs (4 µm):	ø 80 x 180 [mm]	48 pcs.	7.5 h

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

Modular carousel systems:
- 1 to 12 axes

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 4000 x D 2250 x H 2350 [mm]

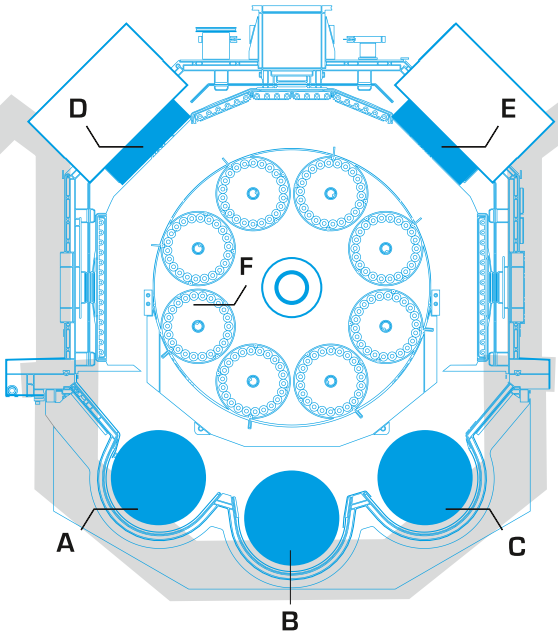
Big Combo Unit

PLATIT Coating Intelligence

PLATIT® 11 - Series

1511 Big Combo Unit

Planar and rotating cathodes



A LARC® XL Cathode
B LARC® XL Cathode
C LARC® XL Cathode
D Planar Cathode
E Planar Cathode
F Carousel

The Pi1511 is a high-volume PVD coating unit. It combines three rotating PLATIT LARC® XL cathodes positioned inside the door with two Planar ARC cathodes in the back of the chamber. The combination of round cathodes with high-performing Planar cathodes allows for the deposition of PLATIT Signature Coatings with familiar flexibility. The LARC® XL cathodes have a very long lifespan and thus guarantee high productivity at a low cost per tool.

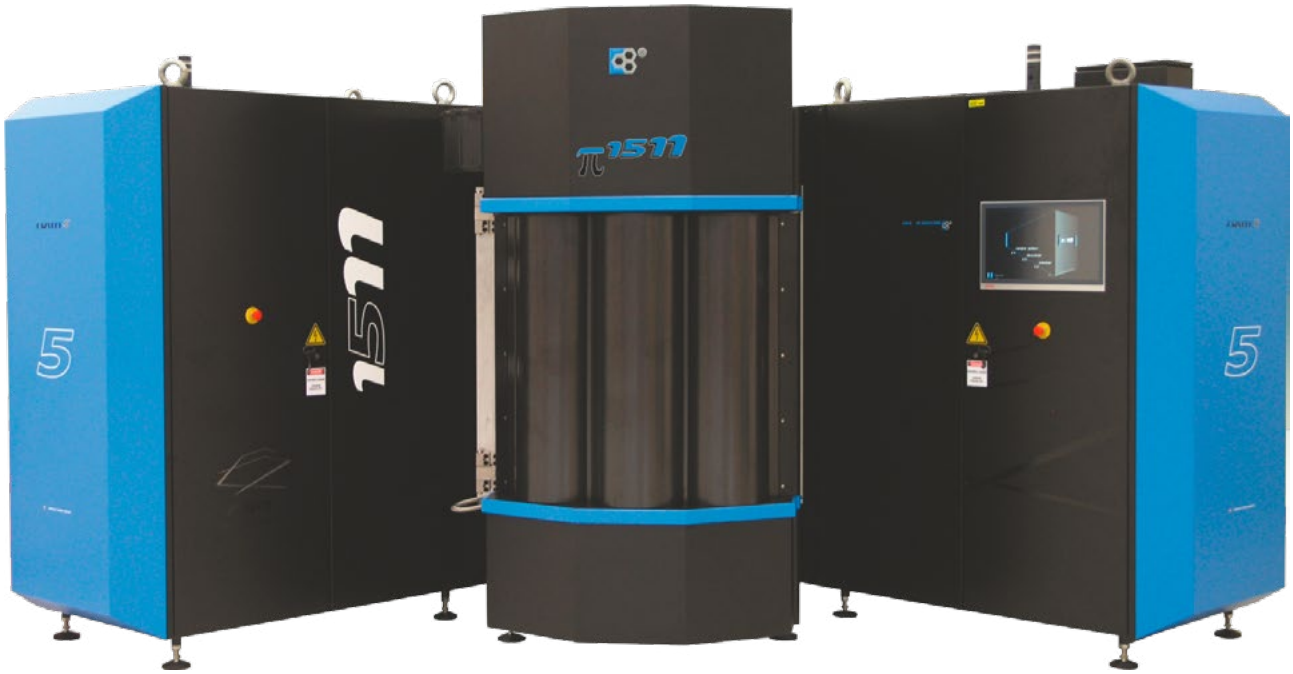
Overview

Technologies applied:

- 3 x LARC® XL (LAteral Rotating XL Cathode) inside the door and 2 x Planar cathode with ARC technology in the back
- MAC-3C (Magnetic ARC Confinement – Coil Current Compensation) for automated magnetic field adjustment
- Quick cathode exchange
- Deposition of PLATIT Signature Coatings

MAC -3C

Magnetic ARC Confinement - Coil Current Compensation



Targets	Targets	Signature	Cycle	Max. Load	Solution	Service
2	3	Coatings	≥ 7 h	400 kg	Turnkey	Worldwide

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: ø 715 x H 805 [mm]
- Max. coating height with defined coating thickness: 711 mm
- Max. load: 400 kg

3 batches/day for*:			
Shank tools (2 µm):	ø 10 x 70 [mm]	1080 pcs.	7 h
Inserts (3 µm):	ø/□ 20/14 x 6 [mm]	7200 pcs.	7.5 h
Hobs (4 µm):	ø 80 x 180 [mm]	48 pcs.	7.5 h

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

Modular carousel systems:
- 1 to 12 axes

Software:
- Simple use and maintenance
- PLATIT SmartSoftware (PC and PLC system)
- Modern control 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 4900 x D 2200 x H 2450 [mm

11-Series accessories

PLATIT Coating Intelligence

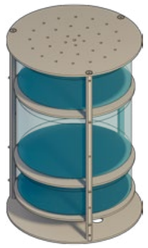
- Carousels
- Holders
- Loading capacities

PLATIT® 11 - Series

Carousels

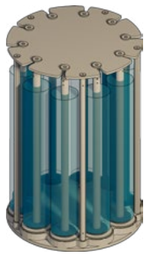
PLATIT® π - Series

111



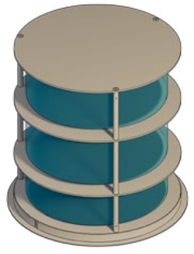
Single rotation
D ≤ 355 mm

4 axes for continuous triple rotation for gearboxes
D ≤ 143 mm

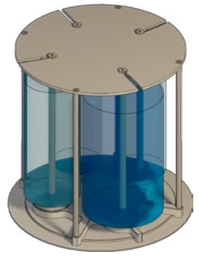


10 axes for continuous double rotation
D ≤ 77 mm

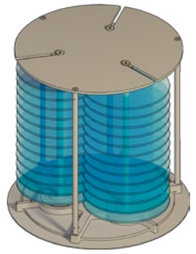
411



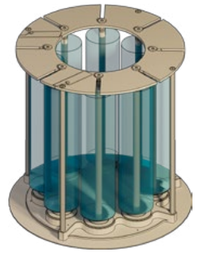
Single rotation
D ≤ 500 mm for saw blades, D ≤ 460 mm for molds & dies



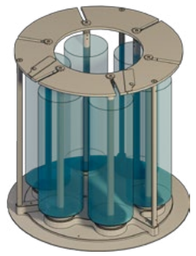
4 asymmetric axes
D3 ≤ 183 mm, D1 ≤ 250 mm



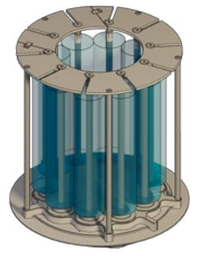
3 axes for saw blades with overlap
D ≤ 285 mm



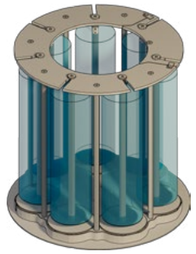
4 / 8 axes
D4 ≤ 215 mm / D8 ≤ 115 mm



3 / 6 axes
D3 ≤ 220 mm / D6 ≤ 150 mm



5 / 10 axes
D5 ≤ 175 mm / D10 ≤ 94 mm



7 axes for triple rotation for gearboxes
D ≤ 143 mm

6 / 12 axes
D6 ≤ 145 mm / D12 ≤ 100 mm

14 axes
D ≤ 85 mm

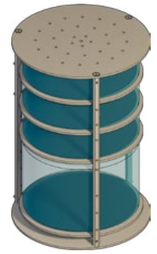
711

Double rotation
D ≤ 600 mm

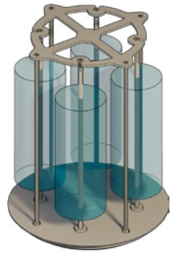
3 axes for kicker
D ≤ 160 mm

6 axes for kicker or gearboxes
D ≤ 143 mm

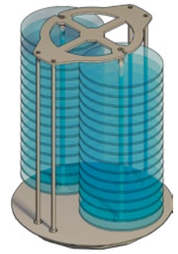
1011 / 1511



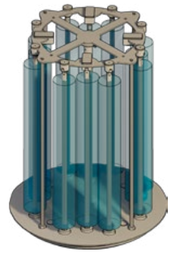
Single rotation
D ≤ 700 mm



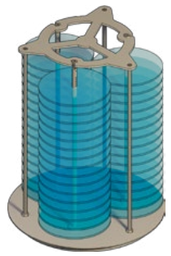
4 axes for kicker
D ≤ 270 mm



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

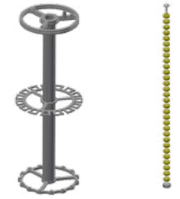
Design and operating principle

Holder for shank tools
- Sleeves and revolvers for holding shank tools

Holder for hobs
- For holding hobs with and without shank
- Hobs rotate continuously

Disc with gears
- For sleeves
- Tools rotate stepwise, driven by kickers from the side

Holder for inserts
- For holding inserts on rods
- Inserts rotate stepwise, driven by kickers from the side
- Loaded holder can be used for all process steps of a turnkey system



Gearbox for triple rotation
- For sleeves
- Tools rotate continuously, centrally driven
- Gearbox simplifies the loading of batches considerably as no kicker adjustment is required

Holder for molds and dies
- For holding molds and dies vertically or horizontally
- Vertical holder with slots allows for flexible clamping of the tools by screws or magnets

Quad gearbox for quad rotation
- For optimal utilization of the available loading volume
- Suitable for shank tools ≤ 8 mm and single-origin loads
- Tools rotate stepwise, driven by kickers from the side

Holder for saw blades
- For holding and separation of saw blades
- Saw blades rotate continuously

Holder for deep drawing dies (rings)
- For holding deep drawing dies (rings)
- Tools rotate continuously

Accessories
- For holding test pieces
- Dummy as a placeholder for empty gearbox positions
- Dummy cage as a placeholder for empty satellite positions

Loading capacities

Coating unit	Tool type	Tool diameter	Tool length	Satel-lites	Discs/ satellite	Holders/ disc	Tools/ holder	Tools/ disc	Tools/ batch
Pi111	Shank tool	6 mm	50 mm	4	4	5	9	45	720
		6 mm	50 mm	4	5	8	4	32	640
		6 mm	50 mm	4	5	18	1	18	360
		8 mm	60 mm	4	4	18	1	18	288
		10 mm	70 mm	4	4	18	1	18	288
		20 mm	100 mm	4	3	12	1	12	144
	Insert	20 mm	6 mm	4	1	15	28	420	1680
	Hob	80 mm	120 mm	4	3	1	1	1	12
		80 mm	180 mm	4	2	1	1	1	8
		75 mm	180 mm	10	2	1	1	1	20

Coating unit	Tool type	Tool diameter	Tool length	Satel-lites	Gearboxes/ satellite	Holders/ gearbox	Tools/ holder	Tools/ gearbox	Tools/ batch
Pi411	Shank tool	6 mm	50 mm	7	4	5	9	45	1260
		6 mm	50 mm	7	5	8	4	32	1120
		6 mm	50 mm	7	5	18	1	18	630
		8 mm	60 mm	7	4	18	1	18	504
		10 mm	70 mm	7	4	18	1	18	504
		20 mm	100 mm	7	3	12	1	12	252
	Insert	20 mm	6 mm	7	1	15	28	420	2940
	Hob	80 mm	120 mm	14	3	1	1	1	42
		80 mm	180 mm	14	2	1	1	1	28

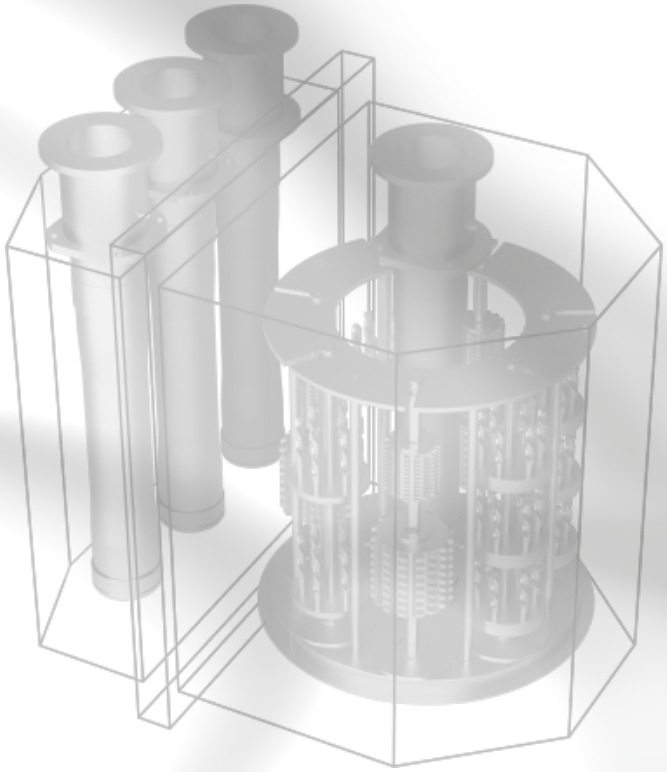
Coating unit	Tool type	Tool diameter	Tool length	Satel-lites	Gearboxes/ satellite	Holders/ gearbox	Tools/ holder	Tools/ gearbox	Tools/ batch
PL711	Shank tool	6 mm	50 mm	6	6	8	4	32	1152
		6 mm	50 mm	6	6	18	1	18	648
		8 mm	60 mm	6	6	18	1	18	648
		10 mm	70 mm	6	5	18	1	18	540
		20 mm	100 mm	6	4	12	1	12	288
	Insert	20 mm	6 mm	6	1	15	22	330	1980
	Molds & dies	150 mm	150 mm	4	4	1	1	1	16
	Sliding parts with DLC2	25 x 10 mm	150 mm	4	6	4	1	1	96

Coating unit	Tool type	Tool diameter	Tool length	Satel-lites	Discs/ satellite	Holders/ disc	Tools/ holder	Tools/ disc	Tools/ batch
PL1011	Shank tool	6 mm	50 mm	4	8	23	4	92	2944
		6 mm	50 mm	4	8	42	1	18	1344
		8 mm	60 mm	4	7	42	1	42	1176
		10 mm	70 mm	4	6	42	1	42	1008
		20 mm	100 mm	4	4	36	1	36	576
	Insert	20 mm	6 mm	4	2	36	30	1080	8640
	Hob	80 mm	120 mm	12	6	1	1	1	72
		80 mm	180 mm	12	4	1	1	1	48

Coating unit	Tool type	Tool diameter	Tool length	Satel-lites	Gearboxes/ satellite	Holders/ gearbox	Tools/ holder	Tools/ gearbox	Tools/ batch
Pi1511	Shank tool	6 mm	50 mm	10	7	5	9	45	3150
		6 mm	50 mm	10	8	8	4	32	2560
		6 mm	50 mm	10	8	18	1	18	1440
		8 mm	60 mm	10	7	18	1	18	1260
		10 mm	70 mm	10	6	18	1	18	1080
		20 mm	100 mm	10	5	12	1	12	600
	Insert	20 mm	6 mm	10	2	12	30	360	7200
	Hob	80 mm	120 mm	12	6	1	1	1	72
		80 mm	180 mm	12	4	1	1	1	48

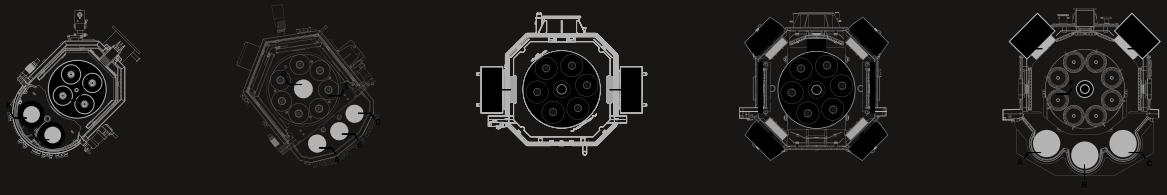
Legend

Tool in a sleeve, driven by a gearbox	Tool in a revolver, driven by a gearbox	Tool in a sleeve, driven by a quad gearbox
Tool in a sleeve, driven by a kicker	Tool in a revolver, driven by a kicker	
Insert with a hole, speared on a rod	Hob on a satellite	



PLATIT Coating Intelligence

Cathode configurations



PLATIT® 11 - Series

Cathode configurations

Standard configurations and available upgrades

PLATIT® π - Series		111	411		711	1011	1511	
	Standard configurations	2 x LARC® PLUS	3 x LARC®, additional options available		2 x Planar HiPIMS & PECVD mode	4 x Planar ARC	3 x LARC® XL & 2 x Planar ARC	
1	TiN	(-, Ti)	(Ti, -, -) (LGD, -, -, Ti SCIL)		(Cr, Ti)	(Ti, -, Ti, -)	(Ti, Al, TiSi20, Ti, AlTi33)	1
2	TiCN		(Ti, -, -)			(Ti, -, Ti, -)		2
3	TiAlN	(Al, Ti)	(Al, AlTi33, Ti) (Ti, Al, -) (Ti, Al, -, AlTi33)			(Ti, TiAl50, Ti, TiAl50)		3
4	TiAlCN		(Ti, Al, -) (Ti, Al, Ti, AlTi33)			(Ti, TiAl50, Ti, TiAl50)		4
5	AlTiN	(Al, Ti)	(Al, AlTi33, Ti) (Ti, Al, -) (Ti, Al, -, AlTi33)			(Ti, AlTi33, Ti, AlTi33)	(Ti, Al, -, Ti, AlTi33)	5
6	CrN	(-, Cr)	(Cr, -, -)		(Cr, Cr)	(-, Cr, -, Cr)		6
7	CrTiN	(Cr, Ti)	(Ti, -, Cr) (Ti, Al, -, CrTi50 SCIL)			(Ti, Cr, Ti, Cr)		7
8	ZrN	(Zr, Ti)	(Ti, -, Zr)			(Ti, Zr, Ti, Zr)		8
9	AlCrN	(Al, Cr)	(Al, AlCr30, Cr) (-, Al, Cr) (-, Al, Cr, AlCr30) (LGD, -, Cr, AlCr30 SCIL)			(Cr, AlCr35, -, AlCr35)	(Ti, Al, Cr, AlCr36, AlCr36)	9
10	AlTiCrN	(AlCr30, Ti)	(Ti, Al, Cr)			(Cr, AlTi33, AlTi33, AlCr36)		10
11	ALL4	(Al, CrTi15)	(CrTi15, Al, Cr) (Ti, Al, Cr, AlCr30)			(Cr, AlTi33, Cr, AlTi33)		11
12	nACo	(AlSi12, Ti)	(Ti, AlSi18, -) (Ti, AlSi18, -, AlTi33)			(Ti, AlTi33, AlTiSi30-10, AlTi33)	(Ti, Al, TiSi20, AlTi33, AlTi33)	12
13	nACRo	(AlSi12, Cr)	(-, AlSi18, Cr) (-, AlSi18, Cr, AlTi33)			(Cr, AlCrSi30-10, Cr, AlCr36)	(-, AlSi18, Cr, AlCr36, AlCr36)	13
14	TiXCo3	(Al, TiSi20)	(Ti, Al, TiSi20)			(Ti, AlTi33, TiSi20, AlTi33)	(Ti, Al, TiSi20, AlTi33, AlTi33)	14
15	TiXCo4		(Ti, Al, TiSi20, AlCr30)					15
16	PSiX		(Ti, Al, TiSi20)					16
17	BorAC		(Al, AlCrB20-10, Cr) (Ti, Al, Cr, TiB2 SCIL)					17
18	BorAX		(TiSi20, Al, Cr, TiB2 SCIL)					18
19	TiB2		(LGD, -, -, TiB2 SCIL)					19
20	WC/C		(LGD, -, Cr, W SCIL)					20
21	DLC1: TiCN + a-C:H:Me		(Ti, -, -)			(Ti, -, Ti, -)		21
22	DLC1: nACRo + a-C:H:Me		(-, AlSi18, Cr)					22
23	DLC2: TiN + a-C:H:Si		(LGD, -, -, Ti SCIL)					23
24	DLC2: CrN + a-C:H:Si		(-, -, Cr)		(Cr, Cr)			24
25	DLC2: CrTiN + a-C:H:Si		(Ti, -, Cr)					25
26	DLC3: Cr + ta-C/a-C		(LGD, -, Cr, C SCIL)		(Cr, C)			26
27	nACoX		(Ti, AlSi18, AlCr45)					27

Legend

Standard configuration	Available with TURBO configuration	Available with LACS® configuration
Available with PECVD option (DLC2)	Available with SCIL® configuration	Available with OXI configuration

VISIT US AT: WWW.PLATIT.COM

platit.com

PLATIT AG
Headquarters
Eichholzstrasse 9
CH-2545 Selzach
info@platit.com
+41 32 544 6200

PLATIT AG
Custom Coating Solutions (CCS)
Champ-Paccot 21
CH-1627 Vaulruz
info@platit.com
+41 32 544 6290

Subsidiaries:

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

PLATIT Advanced Coating Systems (Shanghai) Co., Ltd
Sales, Service, CEC
No. 161 Rijing Road (Shanghai) PFTZ
CN-200131 Pudong Shanghai
china@platit.com
+86 2158 6739 76

PLATIT Inc.
Sales, Service, CEC
1840 Industrial Drive, Suite 220
Libertyville, IL 60048, US
usa@platit.com
+1 847 680 5270
Fax: +1 847 680 5271

PLATIT Scandinavia ApS
Sales
Universitetsparken 7 / PO Box 30
DK-4000 Roskilde
scandinavia@platit.com
+45 46 74 02 38

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Advanced Coating Systems
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