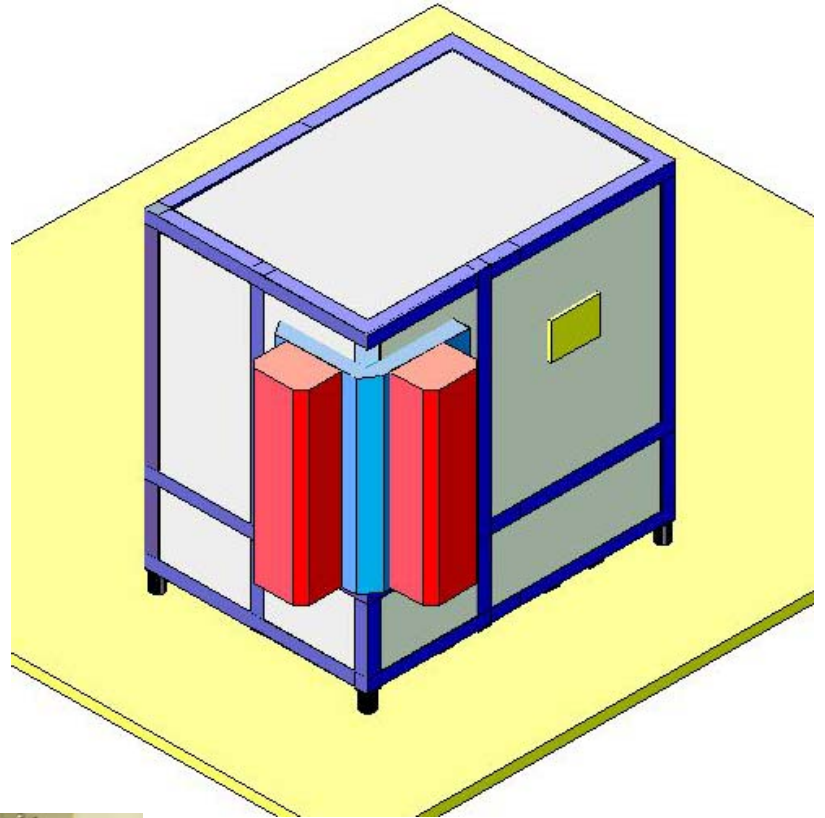


PVT S2/ARC

PVT

**OUR SMALL
COATING UNIT
IS STILL BIG !**



**BECAUSE WE
DON'T ACCEPT ANY
COMPROMISES
ON QUALITY,
REPRODUCIBILITY,
PROCESS
STABILITY
AND ECONOMY**

The PVT S2/ARC is an industrial small size vacuum coating system. It is specifically designed for the deposition of high performance metallurgical coatings, such as titanium nitride (TiN and Ti₂N), and aluminium titaniumnitride AlTiN and many others. Such coatings are evaporated by arc onto a variety of tools, wear components and consumer products.

Not interrupting the vacuum, a PLC (Polymer – Like – Carbon) coating can be deposited on top of such hard coatings to reduce the friction.

The PVT S2/ARC is characterized by:

- Robust system designed for the rigorous production environment using sophisticated vacuum coating technologies.
- Rugged construction marked by an extremely advanced highly refined design.
- Extreme reliability based on intelligent straightforward design and construction.
- The broadest spectrum of coatings and coating technology available in a single system at the lowest possible cost.
- Fully automatic, computer controlled, closed loop process control providing process repeatability, reliability and a user-friendly environment.
- The coatings industry's first „Plug and Play“ deposition system. No costly add-ons required
- The coating industry's broadest capabilities in the smallest footprint.
- Profitable runs available the same day the system arrives, quick and simple installation

TECHNICAL HIGHLIGHTS of the PVT S2/ARC

Patented magnetic arc confinement MAC

- Improved target utilization
- Drastically reduced macro-particle emission

Shorter process time

- Increased heating capabilities
- New and improved cleaning and etching cycles

Improved coating properties

- Advanced interface formation
- Extremely clean process environment

Improved multilayer technology

- Nanolayer technology using shutters

Multiple coatings in the same batch

- Different coatings possible on the same parts with out breaking vacuum or changing targets
- Hard and Soft coatings deposited sequentially in-situ

Improved part handling and fixturing

- Safest most maneuverable transport carts
- Easy to load and use carts with high load capabilities

Improved software design

- Extreme ease of use
- Highly reproducible runs through locked processes
- High level of flexibility for custom tailored coating solutions
- Remote control and diagnostics

Improved thermal management

- Improved intensive cooling
- Double walled construction

Most reliable components

- Brand name components
- Clever integration

SPECIFICATION PVT S2/ARC

ARC-COATING SYSTEM

HARDWARE	PVT S2/ARC	pcs
Vacuum chamber	W650xD650xH1170 (interior dimensions) Volume: 500 l SS double wall jacket water cooled system Front loading/unloading door W650xH1070 (opening) Compact Unit including: Chamber, Chassis, Pumps, Control and Power Cabinet	1
Usable plasma volume	D=340 x H=727 mm, volume=122 l	
Plasma volume for high precision coating	D=340 x H=600 mm, volume=100 l	
Arc cathodes	Cathode with Ti targets: Active area: 727x178x18 mm	1
	Cathode with AlTi target (70/30 at.%, pm): Active area: 727x178x18 mm	1
MAC units	MAC units for optimum control (target utilization and reproducibility during whole lifetime of target)	2
Shutters	Shutters on each cathode, 2 pcs/cathode	4
Pumping	Roughing pump: GEV one stage, 45 m3/h (one-way pump)	1
	Roughing pump: Edwards two stages, 5 m3/h	
	Turbo drag pump, Type Pfeiffer 500 l/s	1
	Valve Turbo/Chamber VAT DN 160 Al	1
	Valves DN40 KF VAT	1
	Valves DN25 KF VAT	2
	Valves DN16 KF VAT	2
		1
Vacuum monitoring	Piezo gauge 1600-30 mbar	1
	Pirani gauges: Edwards APG-M-NW 16 ST/ST	2
	Penning gauge: Pfeiffer IKR 251 DN 25 IDO-KF	1
	Baratron gauge for process control: MKS Type 628B 1MDF2B: DN 25 KF, 5 decades 1.0E-5 to 0.1 mbar	1
Heating	Heaters each 20 kW, total 20 kW	1
Temperature control	Thermocouple devices (fixed position and fixed dummy on top)	2
Bias supply	Magix-Bias Supply 5 kW DC	1
	Magix-Current-Supply 210 A	1
Gas supply	Gas flow controllers (Ar/N2): MKS 500/500 sccm	2
	Optional gas flow controller: MKS 200 sccm for C2H2	-
System dimensions	Compact Unit: W1400xD2000xH2100 mm	
Loading platform	D=340 mm, 4-spindles D=130 mm, version (no tool holder plates included)	1
	Tool Loading weight (max.): 250 kg	
Lifts	Lift to load/unload carousel, 500 kg	1
	Cathode lift device 60 kg (to be used with carousel lift)	1
Control system	PC Pentium III based system with all PC based remote and diagnostic tools	1

HARDWARE	PVT S2/ARC	Pcs
Loading capacity (standard-version): 4 spindles with d=130 mm (can be further optimised with dedicated fixing system)	Mills D16xL92 mm: 4x5x15	300
	Mills D25xL200 mm: 4x3x9	108
	Drills D12xL151 mm:4x4x20	320
	WC inserts ¹ D20xH6 mm:	2000
	Hobs D80xH180 mm:6x3	18
	Hobs D120x280 mm:4x2	8
Approximate door-to-door cycle times, 80% load, 1 cathodes approx. 3 micron TiN on shank tools	Mills D16xL92 mm:	~5.0 h
	Mills D25xL200 mm:	~5.5 h
	Drills D12xL151 mm:	~4.5 h
	WC inserts ¹ D20xH6 mm:	~3.5 h
	Hobs D80xH180 mm:	~6.5 h
	Hobs D120x280 mm:	~7.0 h
Coating processes included	TiN, TiCN	YES
	AlTiN	YES
	Hard+Lubricant(PLC) in same process: on request	-
Additional equipment	Spare part set (mechanical and electronic)	on request
Training	Standard training on PVT S2/ARC	5 days
	Additional training on PVT S2/ARC	on request
	Coating center support (set-up, auditing, failure analysis, reporting)	on request

Data are provisional and are therefore subject to change at any time.

¹ = Inserts with holes, put on rods