SUCOTEC
HIGH-QUALITY CVD COATING EQUIPMENT
CVD – FOR PRODUCTION AND R&D
High-quality CVD coating equipment from Oerlikon Balzers

The SUČOTEC kila, mega and giga series are the new generation of high-quality CVD systems from Oerlikon Balzers. In use around the world, these systems have proven their outstanding performance, flexibility and reliability for nanolayers, multilayers and newly developed coatings in full production conditions.

The most modern Software CoatControl offers fully automatic process control, including intelligent subroutines to manage batch processing in any situation. It can multiply recipe blocks, run step sequences several hundred times for multilayers and back up recipes and status in a separate database. Customers can access PLC (Programmable Logic Controller) codes to troubleshoot hardware and software, and a safety PLC (according to EN ISO 13849-1:2008) monitors all production-relevant valves and sensors to ensure the safety of the coating system.

Oerlikon Balzers supplies recipes for all SUČOTEC coating equipment that meet the demands of leading tool producers for cemented carbides, steel and other substrates. The superior quality of Oerlikon Balzers’ coating systems and our outstanding commitment to our customers cover everything from adaptation to specific customer requirements in the early system development phase to our first-class after-sales service.

Sucotec joined the Oerlikon Balzers family

The acquisition of Swiss-based Sucotec AG in early 2018 by Oerlikon Balzers, a leading global provider of high-tech surface solutions, has not only further enlarged the company’s unique product and service portfolio; it also secures the future of an advanced CVD coating system technology that gives customers the perfect surface solution for specific applications. Sucotec’s coating systems will in future be based on Oerlikon Balzers’ renowned R&D and engineering expertise, and will together continuously accelerate the development of CVD coating systems and offer a first-class global after-sales service.

Dr. Manfred Biedermann (left), Head of Business Line Equipment, Oerlikon Balzers, and Werner Bürgin (right), CEO Sucotec AG
OERLIKON BALZERS’ SUCOTEC EQUIPMENT
Welcome to the next level of CVD coating!

Accurate process parameters in SUCOTEC CVD systems enable high-performance coatings. Oerlikon Balzers has engineered coating equipment for more than 70 years and is represented in many countries worldwide, including an excellent service and support network.

The former Sucotec AG has supplied market-leading CVD coating equipment and has many years of experience in building these systems. The following features and benefits make a SUCOTEC CVD coating system the right long-term choice:

- With a 20% bigger chamber, SUCOTEC CVD systems can coat more tools in less time
- An expandable, modular system enables a high degree of customisation
- Easy to maintain
- Homogeneous coating distribution over entire height
- Redundant monitoring of each process step

You profit from a proven benchmark product backed by Oerlikon Balzers’ first-class global customer service and support.
THE OERLIKON BALZERS SUCOTEC CVD EQUIPMENT FOR THE TOOLING INDUSTRY
Sizes for all needs

SUCOTEC kila
- 280 kg
- 360 mm
- 1250 mm
- S
- 5'800
- L
- 6'800

SUCOTEC mega
- 400 kg
- 460 mm
- 1250 mm
- S
- 9'000
- L
- 12'000

SUCOTEC giga
- 460 kg
- 560 mm
- 1250 mm
- S
- 14'800
- L
- 20'000

Capacity: example of C12 inserts (12.7 mm inserts, 10 mm bores, 25 mm outer rings)

Standard Equipment

The coating process in all SUCOTEC CVD systems is carried out at pressures of 40mbar to 800mbar abs. and temperatures in the range of 700 °C up to 1030 °C. All specified components are industrially proofed and match with highest expectations.

Coatings

Typical coatings which can be deposited with the basic configuration: TiN, TiC, TiCN, MT-TiCN, TiCNO, a/k Al2O3

Gases: Ar, H2, N2, HCl, CH4, H2S, CO2, CO

Liquids: TiCl4, CH3CN

Solids: AlCl3

Up to 25 Mass Flow Controller possible

2 Coriolis

1 Metal Chlorinator

Graphite parts

- Standard rotating gas distribution
- Trays with 10mm holes and 25mm rings, or tailored to customer needs
- Preheating chamber

Software “CoatControl”

- State-of-the-art safety PLC and access secure
- Fully automated and easy to handle
- Trend recording of all components used (pressures, temperatures, gas flows, valve position)
- Calculation of the quantities of gases, liquids and solids used in the recipe
- Batch oriented data acquisition

All heated tubings and valves are insulated with prefabricated materials for best efficiency, avoiding skin irritation and saving a lot of time for mounting.
Options

The extensibility of all SUCOTEC systems allows additional gases and precursors which means they are well prepared for future developments and trends.

In general, the SUCOTEC systems are not limited to the following options.

Coatings

| Nano columnar TiCN, TiSiN, TiSiCN | Ar, C₂H₆, C₂H₄, SiCl₄ |
| TiaN and TiAlCN (fcc or mixed fcc/h with high Al content), TiAlCNO | NH₃, Ar, N₂ |
| HfN, ZrN, ZrCN, ZrBCN, ZrO₂, HrZrN, TaC, TaN | Special gas inlet, gas heating and gas distribution |
| Cr₂O₃, CrCx, Vox | Metal chlorinator for temperatures <450°C |
| TiCN, TiB₂ | Inner metal chlorinator for temperatures in the range of 700 - 1000 °C |

Graphite parts

- Special rotating gas distribution
- Static gas distribution
- Different tray geometries and ring heights, tailored to customer needs
- Different gas preheating systems

Software “CoatControl”

- Integration of customer safety devices into the SUCOTEC system
- MFM (Mass Flow Meter)

Auxiliary equipment

- Low-maintenance process neutralisation system with 2 containers and automatic switch-over
- High-safety service neutralisation system
- State of the art semi-automatic cold trap cleaning system
- Automated reactor brushing centre for optimal inside cleaning to reduce peeling of particles
- Integrated traversing hoist
- Various vacuum pumping systems for extended parameter windows
Software
Access secure and most modern software "CoatControl"

- The control system "CoatControl" offers remarkable capability for further development
- Fully automated
- Possibility to multiply recipe blocks
- Run step sequences of many 100 times for multi layers
- Easy handling
- Recipes and status stored in separate data base

+ Fully automated & user friendly
+ Plenty of possibilities for further developments

Dimensions
Example for installation of SUCOTEC giga, Version L

Footprint approx. 96 sqm with process neutralisation system and service neutralisation system

Built-in PC with screen  Second screen  Visualisation
PARTNERSHIP & SERVICES

After Sales

• Technical support and advice via telephone, the service hotline and e-mail
• Remote diagnostics and control for even faster troubleshooting
• Professional on-site support for installations, upgrades, repairs and maintenance tasks
• Engineer dispatch within 24 hours
• Service agreements
• New and second hand parts, as well as consumables
• Upgrades, including the latest technologies and coatings
• Standard and customer-specific graphite parts

Creating your individual portfolio

We offer joint developments to create your individual coating for your specific application. Make your products stand out from the competition.

Our After Sales bases are located in Europe, America and Asia. From these locations, we provide you with services and products. Our service and application engineers worldwide help you keep your equipment up and running. Furthermore our parts warehouses located in Germany, the USA, Japan and China are committed to maintaining the productivity of your equipment.