



Diffusion coating component repair

VPA, VPC, CVD COATING

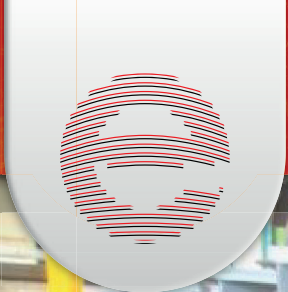
H₂, HF ION CLEANING

AR, H₂ HEAT TREATMENT

ELECTRON Thermal Processing Equipment offers the industry's most advanced heat treatment and diffusion coating equipment. New heat treatment and coating process technologies have been developed, validated and tested including the latest technologies in coating for industrial gas turbines. ELECTRON's large scale heat treatment and/or coating furnaces offer the highest capacity amongst the industry and the most cost-effective solution for heat treatment, cleaning and (internal) coating of F-class and other hot section gas turbine components. ELECTRON provides both equipment and process know-how as turnkey solution to the gas turbine component repair industry.

The state-of-the-art equipment can be used to perform either one, a combination or all of the below listed processes:

- gas phase diffusion coating > VPA, VPC, CVD
- surface cleaning with reactive gasses > H₂, HF Ion cleaning
- heat treatment under controlled atmosphere > Ar, H₂
- pack cementation coating



Coating, cleaning and heat treatment

Model	SCR-750	SCR-1000	SCR-1250
Operating temperature range	600-1200 °C		
Operating pressure range	50-1000 mbar		
Retort diameter	750 mm	1000 mm	1250 mm
Retort height	1000/1500mm	1500/2000mm	1500/2000mm
Free working diameter	700 mm	950 mm	1200 mm
Max. load weight (parts)	250-500 kg	500-1000 kg	750-1500 kg
Number of work stations	1-3	1-3	1-3

The equipment has a modular design and can be delivered in a single or multiple reactor configuration. Listed below the unique and salient features:

- process chamber with ID 1200mm. for large batch capacity
- fast heating and cooling rates
- short cycle time > typical coating cycle <16hrs.
- high temperature uniformity throughout the batch
- controlled diffusion rate with mass flow controlled gas system
- internal coating of F-class blades

Thanks to the (semi-continuous) multiple position configuration and the ability to perform multiple processes in the same system, the solution offered by ELECTRON is fast and cheap in operation resulting in higher throughput for end-users.

The single or multi-chamber system includes the following main items:

- electrical heated furnace
- forced air cooling
- reaction chambers (retorts)
- work grids and coating boxes
- tooling for internal coating
- vacuum pumping system
- gas supply system (Ar, H2, HCl, HF)
- gas abatement system (scrubber)
- temperature and power control cabinet
- operator touch panel
- data acquisition and SCADA (optional)
- CE compliant



Superior design features, more than 25 years of experience in thermal processing equipment, after market quality service and a growing list of satisfied customers makes Electron the best qualified company to supply heat treatment and diffusion coating equipment that meets your requirements.